

TOPICS IN TURKISH SIGN LANGUAGE (TÜRK İŞARET DİLİ – TİD)

SYNTAX:

VERB MOVEMENT, NEGATION AND CLAUSAL ARCHITECTURE

KADİR GÖKGÖZ

BOĞAZIÇI UNIVERSITY

2009

TOPICS IN TURKISH SIGN LANGUAGE (TÜRK İŞARET DİLİ – TİD)

SYNTAX:

VERB MOVEMENT, NEGATION AND CLAUSAL ARCHITECTURE

Thesis submitted to the

Institute for Graduate Studies in the Social Sciences

in partial fulfillment of the requirements for the degree of

Master of Arts

in

Linguistics

by

Kadir Gökgöz

Boğaziçi University

2009

Topics in Turkish Sign Language (Türk İşaret Dili – TİD) Syntax:

Verb Movement, Negation and Clausal Architecture

The thesis of Kadir Gökgöz
has been approved by:

Prof. Dr. A. Sumru Özsoy
(Committee Chairperson)

Assoc. Prof. Dr. Aslı Göksel

Assist Prof. Dr. Meltem Kelepir-Wood

June 2009

Thesis Abstract

Kadir Gökgöz, “Topics in Turkish Sign Language (Türk İşaret Dili – TİD) Syntax:
Verb Movement, Negation and Clausal Architecture”

This study discusses the syntactic structure of Turkish Sign Language (Türk İşaret Dili – TİD). Specifically, we investigate the IP and CP domains in the clausal architecture of TİD. Our data suggest that various nonmanual markers cue syntactic domains in this language, i.e. internal movement reorganization for Asp° , head-nod for T° and head-tilt for Neg° . The spread area of these nonmanual markers, then, is explained through proposing a head-movement analysis to the relevant functional heads. The V° is proposed to move to the functional heads to check the $[\mu\text{V}]$ features of these heads in syntax. The phonological component (PF) associates these nonmanual markers to the manual segments after the syntactic derivation is sent to Spell-Out.

An interesting pattern of syntactic grouping is observed in negative structures. For these type of clauses, the two nonmanual markers, i.e. head-tilt and eye-brow-raising function separately. Head-tilt is analyzed as a defining lexical feature of the Neg° head. Based on the spread area of this marker, it is proposed to be a morpho-syntactic marker, responsible for both verb-movement due to $[\mu\text{V}]$ in its feature specification and the morphological association of the negative clitic to the verb. The other nonmanual marker for negation is proposed to be a purely syntactic marker. Its spread area tends to include the verb and the internal argument but it tends to exclude the grammatical subject. As a spreading nonmanual marker, eye-brow-raising would be expected to spread over the entire c-command domain of the functional head in which it resides. In that case, the subject would be expected to be under the spread area of eye-brow-raising. However, as the subject is not observed to be marked in this area, we propose that there is subject movement to the specifier position of a higher functional head in the C domain. This head is proposed to be the Fin° head. Depending on further data from content questions, we also propose that the C domain is split in TİD syntax, i.e. Fin° and Force° . The exclusion of the grammatical subject under the spread area of eye-brow-raising in negative clauses and the inclusion of the subject under the spread area of the nonmanual marker for content questions is explained through verb-movement to the Force° head in polar questions due to the $[\mu\text{V}]$ feature which is parasitic on the $[\text{Q}]$ feature in this head.

Tez Özeti

Kadir Gökğöz, “Türk İşaret Dili Sözdiziminde Konular:

Eylem Hareketi, Olumsuzluk ve Tümce Yapısı”

Bu çalışma Türk İşaret Dili'nin sözdizimsel yapısını tartışmaktadır. Özellikle, TİD'de Çekimsel Öbek (ÇÖ) ve Tümleyici Öbek (TÖ) incelenmektedir. Verilerimiz çeşitli dilbilgisel yüz ifadelerinin bu dilde sözdizimsel alanlara işaret ettiğini göstermektedir; örneğin, Görünüş-başı için içsel hareket düzenlemesi, Zaman-başı için kafa sallama ve Olumsuzluk-başı için kafayı geriye itme. Daha sonra, bu dilbilgisel yüz ifadelerinin yayılma alanları ilgili işlevsel başlara Baş-taşıma çözümlemesiyle açıklanmaktadır. Eylem-başı, sözdizimde önerilen bu başlara hareket ederek onların Yorumlanamaz Eylem özelliğini silmektedir. Dilin sesbilimsel bileşeni, sözdizimsel çıkarma Dışarı-belirtme'ye gönderildikten sonra bu dilbilgisel yüz ifadelerini el hareketleriyle ilişkilendirmektedir.

Olumsuz yapılarda ilginç bir sözdizimsel guruplama örüntüsü gözlenmektedir. Bu tür tümce yapılarında, olumsuzluğun iki dilbilgisel yüz ifadesi olan kafayı geriye itme ve kaş kaldırma farklı işlevler gerçekleştirmektedir. Kafayı geriye itme Olumsuzluk-başının tanımlayıcı bir sözcüksel özelliği olarak incelenmektedir. Bu hareketin yayılma alanına bağlı olarak, onun biçim-sözdizimsel bir imleyici olduğu öne sürülmektedir. Bu hareketin özellik belirtimindeki Yorumlanamaz Eylem özelliği yüzünden sözdizimsel bir imleyici, olumsuz yapışkanın eylemle ilişkilendirilmesi bakımından biçimbilimsel bir imleyici olduğu öne sürülmektedir. Olumsuzluğun diğer dilbilgisel yüz ifadesinin tamamen bir sözdizimsel imleyici olduğu öne sürülmektedir. Bu ifadenin yayılma alanı Eylemi ve onun tamlayanını altına alma, ancak dilbilgisel özneyi dışarı atma eğilimindedir. Yayılma özelliği gösteren bir dilbilgisel yüz ifadesi olarak, kaş kaldırmanın içinde bulunduğu işlevsel başın tüm k-buyurma alanına yayılması beklenirdi. Bu durumda, öznenin kaş kaldırmanın yayılma alanı altında olması beklenirdi. Ancak, özne bu yayılma alanının içinde belirtilmediği için, öznenin sözdizimde Tümleyici alanda yer alan bir işlevsel başın Gös-pozisyonuna hareket ettiği öne sürülmektedir. Bu başın Sınırlılık-başı (SK) olduğu öne sürülmektedir. Evet-hayır sorularından gelen destekleyici veri sayesinde, TİD'in sözdiziminde Tümleyici-başın ayrışık (Sınırlılık-başı ve Güç-başı) bir baş olduğu öne sürülmektedir. Olumuz tümcelerde dilbilgisel öznenin kaş kaldırmanın yayılma alanı dışında tutulması ancak evet-hayır sorularında dilbilgisel yüz ifadesinin yayılma alanının içinde ifade edilmesi, Güç-başında bulunan Soru özelliğine parazit Yorumlanamaz Eylem özelliği ile açıklanmaktadır.

ACKNOWLEDGMENTS

I would like to express my deepest gratitude to my thesis advisor Prof. Dr. A. Sumru Özsoy without whose patience and guidance this thesis would have never been possible. Our weekly meetings almost all through the year immensely contributed to my understanding of how to do syntax.

I would like to thank Assoc. Prof. Dr. Aslı Göksel for her useful comments on various drafts of the thesis. It makes me really relieved and the more thankful to her to know that she is always there for advice in finding my way when I get stuck. I am also very grateful to Assist. Prof. Dr. Meltem Kelepir-Wood for the various discussions we had over the stages of the study. It is very kind of her to devote her valuable time to me to improve my thesis. I am also very grateful to my professors of Linguistics and Foreign Language Education for their constant encouragement in my studies during both my undergraduate and graduate years.

Sincere thanks to my dear friend Seda Kan, not only for many comments and discussions on various aspects of my thesis but also for being a real friend. Kadir Kozan deserves a lot of thanks for being who he is. Many thanks to Zeynep Kulelioğlu for her support and many cups of teas. Thanks to my classmates in Linguistics. I am also very grateful to my teacher colleagues for their constant encouragement and support.

Many thanks to the informants, N and G, for the data they provided and graduate Computer Engineering students for all their efforts to record and computerize the data used in this study.

Last but not the least; I am deeply grateful to my family for their endless support for and belief in me.

CONTENTS

CHAPTER 1 : INTRODUCTION	1
1.1 Aim	1
1.2 Layout of the Thesis	4
1.3 Theoretical Framework for the Study	5
1.3.1 The Minimalist Program (MP)	5
1.3.1.1 Economy	6
1.3.1.2 Full Interpretation	7
1.3.1.3 Feature Checking	8
1.3.1.4 Head Movement	8
CHAPTER 2 : METHODOLOGY	10
2.1 Informants	10
2.2 Data Collection	11
2.2.1 Elicited Data	11
2.2.2 Picture Signing	12
2.2.3 Spontaneous Dialogues	14
2.3 Notation for the Study	16
CHAPTER 3 : FUNCTIONAL CATEGORIES IN TÌD	17
3.1 The Verb in TÌD	17
3.1.1 Evidence from Aspectual Inflection	17
3.1.2 Evidence from Negation	19
3.2 Going from V to the Extended Projections of V	21
3.3 TAM markers in TÌD	23
3.3.1 Aspect	24
3.3.2 Tense	28
3.3.3 The Expression of Modality: Mod ^o as a Lexical Head	32
3.3.4 Negation	36
CHAPTER 4: NEGATION IN TÌD	38
4.1 Manual Expression of Negation in TÌD	39
4.1.1 Five Fingers Selected – Hand Twist – Vertical Path	40
4.1.2 Five Fingers Selected – Hand Bending – Oval Path	48
4.1.3 Other Forms	49
4.2 Nonmanual Expression of Negation in TÌD	54
4.2.1 Head-tilt	55
4.2.2 Head-shake	57
4.2.3 Eye-brow-raising	59
4.3 (Morpho)syntactic Markers of Negation in TÌD	61

CHAPTER 5 : THE INTERACTION OF NEGATION WITH OTHER FUNCTIONAL CATEGORIES IN TĪD	72
5.1 The Interaction of Negation with Aspect and Tense	72
5.2 Head Movement to the Complementizer Domain	76
5.2.1 Polar Questions	77
5.2.2 The EPP of Fin ⁰ and Head Movement to the Complementizer Domain	81
CHAPTER 6 : CONCLUSION	88
REFERENCES	90

FIGURES

1.	The lexical item DÜN – YESTERDAY (Boğaziçi University TİD course materials 2007-2008)	11
2.	DÜN – YESTERDAY used in a question-answer pair (Boğaziçi University TİD course materials 2007-2008)	12
3.	A picture story used for the picture signing technique (Picture by Piyale Madra from Radikal, a daily newspaper in Turkey)	12
4.	A contrasting picture used for the picture signing technique	13
5.	A picture captured in a session of spontaneous dialogues	14
6.	The position of the cameras relative to the signers during the dialogues ...	15

TABLES

1.	The interaction of T and Asp heads	32
2.	The Free Negative Particle and Negative Clitic compared in hand configuration, hand movement, path movement and palace of articulation parameters	41

CHAPTER ONE

INTRODUCTION

1.1 Aim

This study investigates the syntactic structure of Turkish Sign Language (Türk İşaret Dili – henceforth TİD). More specifically, the study aims to investigate whether (i) TİD possesses a V (erb) P (hrase); and if yes (ii) what is the organization of the extended projections of VP, i.e. IP and CP domains. The diagnoses used are the spreading patterns of specific manual and upper-face nonmanual markers, i.e. brow-raising ‘br’ and head-tilt ‘ht’ for Negation, head-nod ‘hn’ for Tense and internal movement re-organization of the manual sign ‘imr’ for Aspect. In other words, we investigate whether specific syntactic groupings can be revealed through specific manual and upper-face nonmanual markers in TİD.

Starting with Liddell (1978), nonmanual markers are assumed to cue syntactic organization by some linguists (Liddell 1980; Bahan 1996; Matsuoka 1997; Wilbur and Patschke 1999; Neidle et al. 1996, 1997, 2000; Pfau and Quer 2002, 2007). However, others treat nonmanual markers as parallel to intonation in spoken languages (Reilly, McIntire and Bellugi 1990; Wilbur 1991; Nespor and Sandler 1999; Sandler and Lillo-Martin 2006). Weast (2008) offers a different perspective on the discussion and proposes a layered analysis of nonmanual markers whereby different heights of a specific nonmanual marker, i.e. eye-brows, work in such a way as to indicate distinctive syntactic and intonational organization. In our study, we

follow Neidle et al. (2000) and exploit nonmanual markers as cues to syntactic organization.

Syntactic grouping is crucial for a formal linguistic account investigating whether there is hierarchical structure in a given language since hierarchy is envisaged to be one of the integral aspects of the faculty of language in the narrow sense. For spoken languages, hierarchical organization is proposed for the ordering of functional heads in the inflectional domain (Pollock 1989), for various movement constraints (Rizzi 1990; Chomsky 1999; Boeckx 2003), for the left periphery i.e. the C° domain (Rizzi 1997), for the ordering of adverbs (Cinque 1999) and for the ordering of functional heads in negative sentences (Haegeman 2005). In this sense, we think that an investigation of hierarchical organization is crucial for sign languages which are as natural instantiations of the faculty of human language as spoken languages are (Sandler and Lillo Martin 2006).

A number of sign language studies investigate the hierarchical structure of sign languages by observing the behavior of nonmanual markers. For instance, Wilbur and Patschke (1999) claims that eye-brow-raising marks A' positions, specifically Spec-CP and Spec-DP for American Sign Language (ASL) as opposed to previous claims that eye-brow-raising falls above information which is presupposed, given or otherwise not asserted. They suggest that eye-brow-raising is utilized for indicating an A' slot which is needed in a spec-head configuration for a checking mechanism between the [+wh] feature in a C° head or between a [F] focus and a [P] reposing feature in D° head and the operator in the specifier positions of these heads. In another study, Petronio and Lillo-Martin (1997) argue against the proposal that wh-specifiers are on the right of the C° head (cf. Neidle et al. 1997) in ASL by referring to the syntactic behavior of wh-doubles, focus and topic elements under the

spread area of certain nonmanual markers. Braze (2004) also makes reference to the spreading patterns of nonmanual *wh_q* marker while he discusses verb raising and object fronting in ASL.

As briefly cited above, the study of nonmanual markers is an appropriate locus while investigating the syntax of a sign language. Therefore, for our investigation of syntactic grouping, we will be concerned with spreading patterns of various nonmanual markers and investigate whether these are indicative of syntactic grouping as regards TĪD:

- (1) INDEX1 İŞARET BİL[^]NEG br HİÇ
 INDEX1 SIGN KNOW[^]NEG NOT-AT-ALL
 “I don’t know any sign (language).”
- (2) INDEX1 YARIN OKUL hn GİT [asp: incompleted]
 INDEX1 TOMORROW SCHOOL GO [asp: incompleted]
 “I will go to school tomorrow.”
- (3)
- a. q
 BİLGİSAYAR BOZUL [asp: completive]
 COMPUTER BREAK-DOWN [asp: completive]
 “Did the computer break down?”
- b. q
 EKРАН KART ÇIKAR [asp: completive]
 MONITOR CARD PLUCK-OFF [asp: completive]
 “Did you pluck off the display adapter?”

In (1), the nonmanual marker eye-brow-raising behaves selectively for its spread domain in the negative sentence. The subject INDEX1 is excluded from the spread domain of eye-brow-raising but the internal argument SIGN and the post-verbal element NOT-AT-ALL are included in it. In (2), the nonmanual marker head-nod, simultaneously co-occurs with the verb. In (3a) the nonmanual question marker spans over the whole clause while in (3b) the nonmanual question marker spreads

over the verb only. We did not encounter a sentence in which the nonmanual question marker would spread over the internal argument but not on the subject in a polar question. This might indicate that the nonmanual question marker is selective for its spread domain, too. Thus, the sentences in (1)-(3) might indicate that nonmanual markers are sensitive to syntactic grouping. In this study, we will be concerned with the nature of this grouping in TĪD.

The insight gained through a formal investigation of syntactic grouping in sign languages will contribute significantly to our understanding of the computational system of human language (Sandler and Lillo-Martin 2006). In this sense, we hope our investigation of specific aspects of TĪD syntax will shed light on not only sign language studies but also on our understanding of the working of the computational system of human language.

1.2 Layout of the Thesis

In the remaining part of Chapter 1, we will discuss the relevant issues in the Minimalist Program (Chomsky 1995 et seq.) which constitutes the theoretical framework of our study.

Chapter 2 introduces the methodology of the study. In this chapter, we introduce the informants and data collection procedures. The advantages and disadvantages of the three data collection techniques used for our study will be discussed. At the end of this chapter, notation conventions used for our study will be listed.

Chapter 3 is on the structural discussion of the functional categories we propose for TĪD. Two functional categories for TĪD are proposed in that chapter

based on the patterns of manual and nonmanual markers. Throughout this chapter, we give a formal syntactic account for our observations on the realizations and interactions of functional categories.

Chapter 4 includes our description of the expression of Negation, both manual and nonmanual. After familiarizing the reader with the bolts and nuts of negation in TID, we start discussing (morpho)syntactic properties of negation in this chapter.

Chapter 5 constitutes a comprehensive structural discussion of negation with other functional categories. Based on the proposed dependencies with other functional categories, the phrase structure for the language is proposed in this chapter.

Chapter 6 summarizes the study and points out to prospective areas of research for this language.

1.3 Theoretical Framework for the Study

1.3.1 The Minimalist Program (MP)

We adopt the theoretical tools of the Minimalist Program (Chomsky 1995) for our study. Minimalist Program (henceforth MP) is a research agenda in the broader Generative Framework initiated by Chomsky (1957). It builds on the theoretical discussions of its antecedent approach in the Generative Framework, namely Principles and Parameters approach which is also referred to as Government and Binding Theory (GB).

MP is based on the assumption that language is an optimally efficient system. This system interacts with two performance systems, i.e. the articulatory-perceptual

(AP) and conceptual- intentional (CI) systems, through satisfying conditions on the interface levels of Phonological Form (PF) and Logical Form (LF). The conditions of the PF and LF are instructed by two basic principles: (i) the Principle of Economy and (ii) the Principle of Full Interpretation.

1.3.1.1 Economy

The knowledge of language or Universal Grammar (UG) is composed of a limited set of principles and constraints. Children acquire their language through an interaction of these principles and external linguistic input. The principle of economy is the central principle in the set of principles that UG is assumed to have. This principle dictates that children adopt the most economical strategies while acquiring their language.

The Principle of Economy has two connotations in MP. The first connotation is related to methodological economy whereby theoretical tools are subjected to ‘Occam’s razor’ which dictates that a theory be as parsimonious and simple as it can be (Hornstein, Nunes and Grohmann 2005). This understanding of economy has effects on the parsimony of representations, i.e. the elimination of Deep Structure and Surface Structure in MP.

The second connotation is related to substantive economy. The least effort considerations for the derivation of a sentence are related to substantive economy, i.e. the type of economy intrinsic to language. Language has a certain set of limited sources, i.e. a limited set of principles and constraints. Given these limited resources language has to adopt the most economical way in the derivation of sentences. The derivation from the lexicon to PF and LF should be economical. That’s why an operation of Merge is preferable to an operation of Move. Merge consists of only one

step in the derivation which is putting two elements together, i.e. combine [X] and [Y] to yield [X Y]. On the other hand Move consists of two steps: displacement and internal merger of the displaced element, i.e. Move [X] to a position related to [Y] and combine [X] and [Y] to yield [X Y].

Furthermore, movement in the overt syntax such as overt wh-movement in English is less economical than covert wh-movement in Chinese because overt movement enlarges the derivation; it has observable effects as it takes place in overt syntax which feeds the Spell-Out where PF and LF map the derivation to the performance systems AP and CI. On the other hand, covert movement takes place after Spell-Out in LF, which means that the derivation can not be enlarged in PF as PF and LF cannot communicate after Spell-Out.

1.3.1.2 Full Interpretation

The semantic interface rules can operate on interpretable features brought out by the derivational mechanisms in syntax. Therefore, an uninterpretable feature reaching the semantic interface cannot be interpreted by the semantic interface rules. So, the syntax should have a principle which eliminates all the uninterpretable features before the syntactic derivation is sent to Spell-Out. This principle is called the Principle of Full Interpretation (Chomsky 1993, 1995). The Principle of Full Interpretation proposes that all the morphological uninterpretable features should be checked by the relevant morphemes sharing the same features before the semantic interface rules apply. This means that syntactic operations should eliminate all the uninterpretable features before Spell-out applies. The elimination of features is rendered through the mechanism of feature checking.

1.3.1.3 Feature Checking

Feature checking is a syntactic operation that deletes the uninterpretable feature [uF] of a syntactic object [X] through matching the relevant morphological feature of it with another object [Y] having the feature [F].

Chomsky (1995) assumes that a functional category like T or C carries a strong uninterpretable feature. The uninterpretable features of these categories are checked against a noun or a verb through an operation of Move or Agree. One can consider subject movement in English for an operation of Move. T in English has an [uN] feature and the movement of the subject to the [spec-TP] position is required in English for a checking operation between the [N] of the moved subject and [uN] of T. Feature checking can also be realized through an Agree operation. In this type of checking operation, the uninterpretable feature of a probe searches the derivation downwards in order to find a target with the relevant feature. Once the target with the relevant feature [F] is found, the [uF] of the probe and the [F] of the goal are matched to delete the [uF] of the probe. A further note on feature checking is that an uninterpretable feature must be checked as soon as possible (Lasnik 1999). This requirement renders the operation of feature checking a local and cyclic operation.

1.3.1.4 Head Movement

A head is defined as a terminal node (Chomsky 1995). Matushansky (2006) on the other hand defines a head in syntax as a syntactically atomic unit. This syntactically atomic unit might be internally complex or not but the crucial aspect of this unit is that it is a syntactically indivisible bundle of formal features (Matushansky 2006).

Head-movement is an instance of movement wherein an X° , a syntactically atomic unit, moves (Roberts 2001). There are certain conditions on the application of head-movement, i.e. locality, structure preservation and a well-formed trace left by the moved head (Roberts 2001). The condition of locality means that while a head X moves to a head Y , no head Z can intervene in between X and Y , i.e. $[Y \dots Z \dots X]$ is out (Travis 1984). Structure preservation dictates that a head can move to another head position. The trace condition dictates that the trace of the moved head should be c-commanded by it.

Movement should apply for an independent motivation. Thus, the motivation behind verb movement, which is a case of head movement, is to eliminate the $[uV]$ features in the feature bundles of the relevant functional heads, i.e. T and C (Chomsky 1995) in syntactic derivation namely before Spell-out (Matushansky 2006).

Head movement in our study is regarded as a syntactic phenomenon following Zwart (2001) and Matushansky (2006). On the other hand, Chomsky (2000), and Boeckx and Stjepanović (2001) argue that head movement takes place in PF; neither does it extend the derivation as it consists of adjoining an already merged head to another in the derivation and nor does it have any semantic output. For a better discussion of head movement taking place in syntax vs. in phonology, we think that we need to investigate the relevance of a v head if any in T \bar{I} D as well as discussing the interpretation of the output of head-movement at LF as the two groups above base their argumentation on these constructs. For our study, we consider head-movement as a syntactic operation and leave the relevant follow-up of the assumption to further inquiry.

CHAPTER TWO

METHODOLOGY

In this chapter, we introduce our informants and discuss the techniques used for the data collection procedure for this study. At the end of this chapter, we will list the notation system used for our study.

2.1 Informants

We worked with two deaf native signers of TİD for our data collection procedures. These signers were exposed to TİD during the critical period for language acquisition. One of the signers has an elder brother who is also deaf. The other signer's mother used to teach at a deaf school. These two signers use TİD as their primary language. Both were born and raised in Istanbul. They currently live in Istanbul. One of the signers, G, started to get sign input before schooling starts, through her mother's efforts to involve her in the signing community. For N, exposition to the language also started during the critical period through her communication with her elder brother.

For the study, we obtained written permission from both of the participants in accordance with the considerations of the Ethical Committee of Boğaziçi University.

2.2 Data Collection

We consulted three techniques to collect data for our study, i.e. (i) data elicitation through written prompts, (ii) individual picture signing and (iii) spontaneous sign dialogues between the two informants.

2.2.1 Elicited Data

Elicited data consists of 20 lessons which are prepared for the fall introductory TİD course at Boğaziçi University for the educational year 2007-2008. For this set of data, lessons are grouped around certain themes like the family, technology, transportation and professions etc. The native TİD signer N has been recorded for this set of data.

The first step of the recording included showing the signer an individual sign in written form to be signed. After a certain set of individual signs were recorded, these signs were given in full sentences or smaller phrases in written prompts and the signer was asked to sign these phrases as well. These recordings were made with one camera from the front and then Turkish subtitles were added under each sign or sign sequence in the computer environment (Figures 1 and 2):



Figure 1 The lexical item DÜN – YESTERDAY
(Boğaziçi University TİD course materials 2007-2008)



Figure 2 DÜN – YESTERDAY used in a question-answer pair (Boğaziçi University TİD course materials 2007-2008)

2.2.2 Picture Signing

The second technique used for collecting TİD data is picture signing. For obtaining this set of data seven picture stories, some in the form of contrasting pairs and some in the form of sequences of scenes, were shown to our informants and the informants individually narrated the stories to the camera (Figure 3):

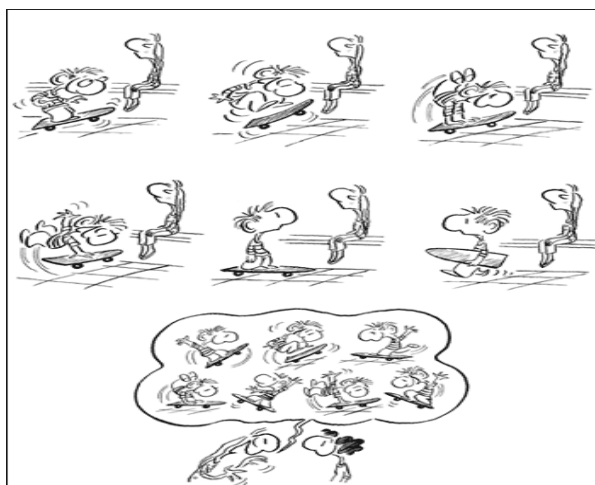


Figure 3 A picture story used for the picture signing technique (Picture by Piyale Madra from Radikal, a daily newspaper in Turkey)

The motivation for using picture signing technique was to elicit natural sentences. The signers were asked to narrate the stories in a natural way as they would do when narrating stories to deaf people. The contrastive pictures as in Figure 4 revealed an interesting set of data. The signers seemed to be influenced by the overall affect of the target sense of non-existence of some objects or contrastiveness of some actions in the second part of the contrasting pictures and seemed to display affective facial expressions in addition to exaggerated nonmanual marking for negation for the whole signing session of the negative pair of the pictures. We think this rendered the expressions more emphatically marked and consequently the spreading scope of nonmanual expressions for negation was difficult to detect. On the other hand there are several advantages of the picture signing technique like the abundant use of classifier constructions and the narration technique which is full of positive and negative sentences, imperatives and questions. We still need to note that the status of the full range of facial expressions used for the expression of negation, i.e. the interaction of what is called “affective facial expressions” and grammatical nonmanual markers, deserves further inquiry. For our study, we discuss specific nonmanual markers and leave the interaction of “affective” facial expressions and grammatical nonmanual markers to future studies.

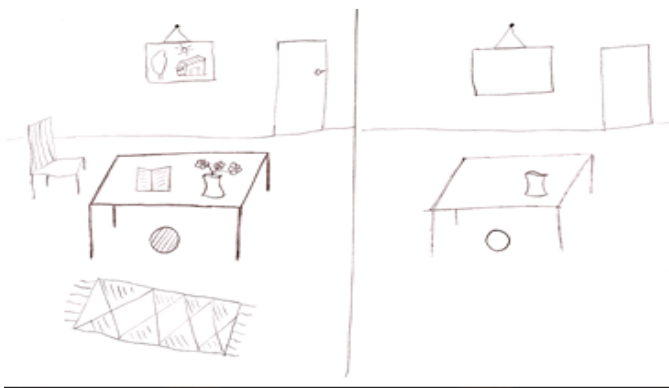


Figure 4 A contrasting picture used for the picture signing technique

2.2.3 Spontaneous Dialogues

The third technique used to collect data was prompting spontaneous dialogues through a daily topic like schooling experiences, an accident witnessed or the news. Given that data elicitation through a set of spoken language stimuli to the signers could potentially decrease the naturalness of the data due to language transfer or observer effects, this procedure was avoided in this technique. Also, early topic assignment before a signing session could potentially affect the spontaneity of the data by setting the signing session on a certain narration. Due to these considerations, spontaneous topics of conversation were assigned to the signers immediately before recording these signing sessions. The topics included daily issues like the news, schooling experiences and memories such as a train accident. We have recorded nine of these sign dialogues (Figure 5):



Figure 5 A picture captured in a session of spontaneous dialogues

For recording, two cameras from two corners with 90 degrees of angle were used to detect the nonmanual and manual expressions with an optimum sight (Figure 6):

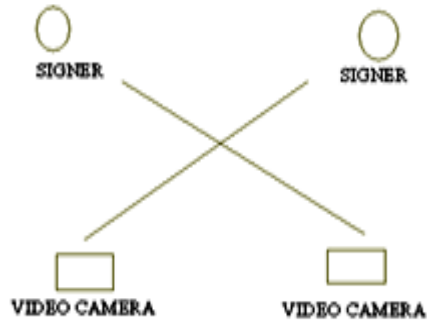


Figure 6 The position of the cameras relative to the signers during the dialogues

The benefit of this set of data is that it is not controlled by or under the influence of either Turkish or a set of visual stimuli in any way but consists of natural instances of question-answer pairs and is based on natural narration. Thus, sentences out of this set of data are extensively used to make generalizations about the patterns of grammatical manual and nonmanual markers.

Some transcriptions of the dialogues have been supplied by N. We consulted our informants to clarify the status of some signs/sign groups when help was needed.

2.3 Notation for the Study

SIGN	the spoken language glosses
SIGN-SIGN	more than one spoken language word needed to translate this single sign
S-I-G-N	finger spelling
SIGN^SIGN	a sign language compound
$\frac{t}{\text{SIGN (S)}}$	topic expressed nonmanually
$\frac{wh}{\text{SIGN SIGN}}$	a wh-question expressed nonmanually
$\frac{q}{\text{SIGN SIGN}}$	a yes/no (polar) question expressed nonmanually
$\frac{hn}{\text{SIGN SIGN}}$	head-nod as a grammatical marker
$\frac{br}{\text{SIGN SIGN}}$	eyebrow-raising as a grammatical marker
SIGN [asp: incomplete]	a sign that is marked for aspectual inflection
INDEX	pointing signs including pronouns, demonstratives, and locatives are glossed IINDEX

(Notations¹ are adapted from Brentari (1998), Sandler and Lillo-Martin (2006) and Perniss et al. (2007))

¹I want to thank Meltem Kelepir-Wood for remarking on the notation used in the study and suggesting some notation changes for several representations of sign strings.

CHAPTER THREE

FUNCTIONAL CATEGORIES IN TĪD

This chapter discusses the interaction of the verbal functional categories in TĪD. The chapter first establishes the existence of the lexical category Verb in this language through independent evidence. In order to substantiate the relevance of this category for TĪD, two independent sets of evidence, i.e. aspectual inflection and the behavior of the free negative particle and the negative clitic, are discussed.

3.1 The Verb in TĪD

In this section we present evidence that verbal and nonverbal predicates behave differently with respect to the inflectional categories Aspect and Negation.

3.1.1 Evidence from Aspectual Inflection

We observed in our data that encoding aspectual information seems to be restricted to verbs. In (4), the verb is inflected for completive aspect, i.e. marked with an accentuated single movement (Zeshan 2003 and 2004; Kubuş 2008). In (5) the verb is inflected with incompletive aspect, i.e. marked with repetitive short movements (Zeshan 2003 and 2004; Kubuş 2008):

(4)



ESKİŞEHİR SCHOOL ENTER [asp: completive]

“I entered school in Eskişehir.”

↓
[accentuated single movement of the base sign]



ELDER-BROTHER WHAT DO [asp: incomplete]
“What is the elder brother doing?”

↓
[repetitive shorter movement of the base sign]

We have not observed any nonverbal predicates inflected for aspectual information.

So, none of the hypothetical strings in (6) and (7) are attested in our database:

(6) DERS KOLAY [asp: completive]
COURSE EASY [asp: completive]

(7) INDEX1 ÖĞRETMEN [asp: incomplete]
INDEX1 TEACHER [asp: incomplete]

3.1.2 Evidence from Negation

The distribution and spread domains of negative markers also provide evidence for the distinction between verbal and nonverbal categories. The basic negative marker in TĪD has a free form and a cliticized form (Zeshan 2003, 2004). The cliticized form tends to follow the verbal predicates (8) and (9) rather than nonverbal predicates (10) and (11). ^NEG in (8) and (9) indicates the cliticized negative marker and NEG in (10) and (11) indicates the free form of this marker:

(8)



TURKEY INDEX-PL GO GET-ASHAMED^NEG
“Those people in Turkey are increasingly not getting ashamed.”

(9)



INDEX1 SPEAK KNOW^NEG
“I don’t know how to speak.”

(10)



MATHEMATICS EASY NEG
“Mathematics is not easy.”

(11)



INDEX1 TEACHER NEG
 “I am not a teacher.”

There is a related piece of evidence from nonmanual marking of negation. The nonmanual marker head-tilt spread co-occurs with the negative manual sign: if the manual sign is a free form, i.e. when it follows a nonverbal predicate, it co-occurs with it only (12) and (13); if the negative manual sign is cliticized, i.e. when it follows a verbal predicate, it co-occurs with VERB^NEG complex (14) and (15):

(12) INDEX1 TEACHER $\frac{\text{ht}}{\text{NEG}}$
 “I am not a teacher.”

(13) SCHOOL NEW $\frac{\text{ht}}{\text{NEG}}$
 “The school is not new.”

(14) INDEX1 WORD $\frac{\text{ht}}{\text{KNOW}^{\wedge}\text{NEG}}$
 “I don’t know the word.”

(15) SPEAK $\frac{\text{ht}}{\text{LIKE}^{\wedge}\text{NEG}}$
 “I don’t like speaking.”

Depending on independent evidence from aspectual inflection and manual and nonmanual markers of negation, we propose that Verb is a distinct category in TĪD. We will now look at the distribution of eye-brow-raising in negative sentences and propose that extended projections of V might exist in TĪD.

3.2 Going from V to the Extended Projections of V

Depending on evidence from aspectual inflection and negation, we have proposed that Verb exists in TİD as an independent lexical category. We will now discuss if we can postulate extended projections above V, i.e. the VP projection in TİD.

In order to do this, we will consider negative transitive sentences and the spreading area of eye-brow-raising in these sentences. In negative transitive sentences, there is a tendency for eye-brow-raising to take scope over the verb and the internal argument preceding it as in (16), (17) and (18):

- | | | | | | |
|------|---------------------------------------|----------------|-----------------------|-----------|--|
| | | | | | |
| | | | <u>ht²</u> | | |
| | | | <u>br</u> | | |
| (16) | INDEX1 | KELİME | BİL^NEG | | |
| | INDEX1 | WORD | KNOW^NEG | | |
| | “I don’t know the word.” | | | | |
| | | | | | |
| | | | <u>ht</u> | | |
| | | | <u>br</u> | | |
| (17) | KONUŞ | SEV^NEG | | | |
| | SPEAK | LIKE^NEG | | | |
| | “I don’t like speaking.” | | | | |
| | | | | | |
| | | | | <u>ht</u> | |
| | | | | <u>br</u> | |
| (18) | INDEX1 | İŞİTME-ENGELLİ | ÜZÜL | İSTE[NEG] | |
| | INDEX1 | DEAF | GET-UPSET | WANT[NEG] | |
| | “I don’t want the deaf to get upset.” | | | | |

On the other hand, neither the subject as in (19) nor an adjunct as in (20) tends to occur under the spreading scope of eye-brow-raising. Furthermore, when there is an overt subject and an adjunct preceding the verb in the same sentence, these are not marked under the spreading scope of eye-brow-raising (21):

²Note that head-tilt (ht) spreads over the VERB^NEG complex in (16), (17) and (18). The implications of the spreading behaviour of this nonmanual marker will be discussed in the following chapters, where we regard this very spread area as evidence of verb movement to the Neg^o head.

(19) $\frac{\frac{\text{INDEX1 İŞARET BİL}^{\wedge}\text{NEG}}{\text{br}}}{\text{hs}}$ $\frac{\text{HIÇ}}{\text{br}}$
 INDEX1 SIGN KNOW[^]NEG NOT-AT-ALL
 “I don’t know the sign at all.”

(20) $\frac{\frac{\text{TÜRKİYE İŞİTME-ENGELLİ GÖZÖNÜNE-AL}^{\wedge}\text{NEG}}{\text{br}}}{\text{br}}$
 TURKEY DEAF CONSIDER[^]NEG
 “The deaf are not taken into consideration in Turkey.”

(21) $\frac{\frac{\text{ŞİMDİ ORGAN OL}^{\wedge}\text{NEG}}{\text{br}}}{\text{hs}}$
 NOW ORGAN GROW[^]NEG
 “The organ is not growing anymore.”

We propose that the syntactic implication of this pattern might be that there is syntactic grouping around the Verb and the internal argument as in (22):

(22)

		$\frac{\text{hs}}{\text{br}}$		$\frac{\text{br}}{\text{hs}}$
NP	XP	[NP	V [^] NEG	XP]
External Arg.	Adjoined Category	Internal Arg.	Verb	Adjoined Category

 Domains above outside VP

 The VP domain

The representation above shows that the internal argument and any post-verbal XPs are under the spread area of eye-brow-raising in negative transitive sentences. On the other hand, the subject and an adjoined category before the internal argument are not under the spreading domain of eye-brow-raising. Further structural implications of this grouping will be discussed in Chapters 4 and 5. Suffice it to say at this point that there is independent evidence for the category of V from inflectional aspectual inflection and negation. Also, syntactic grouping of VP + possible extensions of it in

the inflectional domain come from the spreading patterns of a specific nonmanual marker of negation in TĪD, i.e. eye-brow-raising.

3.3 TAM markers in TĪD

In this section, we investigate the nature of grammatical marking on the TĪD lexical verbs and depending on the association of specific nonmanual markers with the verb we propose that there is an array of verbal projections dominating the aforementioned VP domain in TĪD clause structure. We argue that the verbal functional projections in the IP domain in TĪD are Aspect, Tense, Modality and Negation. These syntactic projections, with the exception of the latter two, i.e. Modality and Negation, have nonmanual phonological markers, i.e. internal movement re-organization for Aspect, head-nod for Tense and head-tilt + eye-brow-raising for negation. Modality is expressed through manual markers. We take Modality as a verbal projection immediately dominating the VP. The functional category Negation that also has a manual marker in the phonological component is the highest projection in the verbal complex. Based on the association between nonmanual markers and the predicate, we argue that there is head movement to the IP domain in this language following Matsuoka (1997) and Quer and Pfau (2002, 2007)³.

³Two types of head movement have hitherto been analyzed in the literature: (i) verb movement, and (ii) head movement in nominals. Verb movement includes the “cases where the moved X° is a verb, and the target of movement is a position in the functional structure” (Roberts 2001). The functional structure of a clause is composed of IP and CP, and consequently there are two instances of verb movement in grammar: (i) verb movement into I° and (ii) verb movement into C° . In this study, the only type of head movement we are concerned with is verb movement. We leave the structure of nominals in TĪD to future inquiry.

3.3.1 Aspect

Zeshan (2003) and Kubuş (2008) observe that the verb in TİD can be inflected for two aspects⁴. These are identified as completive and incompletive aspects which are expressed through movement modification on the base form of the verb, i.e. single accentuated hand movement for completive aspect and repetitive shorter hand movement for incompletive aspect. We take this re-organization as a phonological reflex of the syntactic Asp^o. In what follows, we will give a brief overview of the morpho-syntactic nature of Aspect, Tense and Modality in TİD and propose hierarchical ordering among these distinct functional categories above the VP. In Chapter 4, we will give a detailed description of Negation which will lead us to structural discussions between negation and other functional domains.

Aspect is expressed manually and it is affixed onto the preceding lexical verb⁵. A single accentuated path movement of the verb which is slower and longer

⁴A third category namely a habitual aspect which is rendered through the full repetition of the verb in different locations is also reported for TİD (Kuş 2008). This aspect is out of the scope of this study as there is no data which would exemplify its occurrence on its own and more crucially its interaction with other functional categories in our database.

⁵We argue that the phonological reorganization of the verb for expressing Aspect in TİD reflects syntactic operations. Similar to our analysis, Matsuoka (1997) relates the internal reorganization of the verb in ASL to the functional category of AspP in syntax. The author suggests that there is verb-raising to the affixal Asp^o head to prevent the otherwise stranded aspectual affix. Matsuoka considers three sets of American Sign Language data, (i), (ii) and (iii) below, all of which include a verb inflected for aspect, i.e. an internal reorganization of the verb:

(i) Verb Sandwich

STUDENT NAME S-A-L-L-Y TYPE HER TERM PAPER TYPE [asp: cont.]

“A student whose name is Sally was typing and typing her term paper.”

(Matsuoka, 1997)

(ii) Verb Final

S-H-E R-A-D-I-O LISTEN [asp: cont.]

“She was continuously listening to radio.”

(Romano, 1991 as cited in Matsuoka, 1997)

(iii) Object Raising

TOMATO GIRL EAD [asp: durative]

“The girl eats tomatoes for a long time.”

(Matsuoka, 1997)

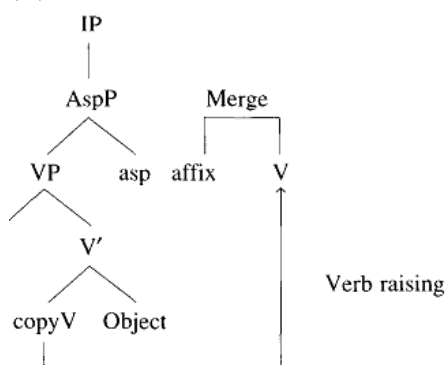
than the base form movement of the same verb is used to express completive aspect.

(23a) illustrates a verb inflected for completive aspect and (23b) represents the association of movement-reorganization of the predicate in an LML template

(Sandler and Lillo-Martin 2006):

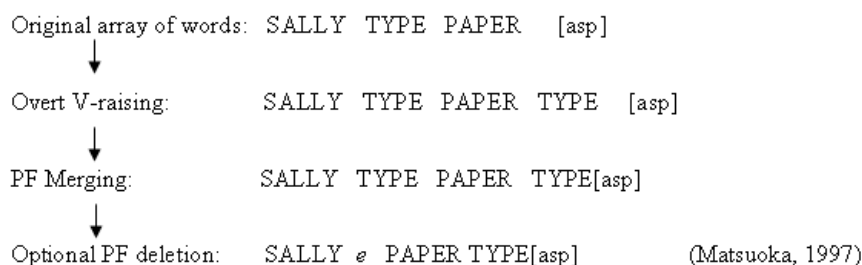
The canonical sign order in ASL is SVO. However, we observe in (i), (ii) and (iii) that the inflected verb occurs at the sentence final position. In order to account for this fact, the author proposes that the derivation for all of these sentences include overt verb raising (iv):

(iv)



Rather than adopting the Checking Theory (Chomsky 1995), the author adopts Lasnik's (1995a and b) Enlightened Self Interest as the motivation for verb-raising. Note in the Verb Sandwich (i) data that there is a lower copy of the Verb which is in its bare form, i.e. without an aspect marker. In order to account for the existence of the Verb in its bare form the author refers to Copy Theory (Chomsky, 1995). For ASL, as the author suggest there is parametric variation for the lower copy. The deletion of the lower copy is optional in PF. So the lower copy might (ii) or might not (i) be silent in ASL. (v) shows the derivation of Verb Sandwich and Verb Final in ASL:

(v)



We didn't encounter cases considering verb sandwich or word order change due to aspectual marking on the verb and rather than taking the aspectual marker as a suffix in need of an attachment segment, we prefer to refer to [μ V] features of the relevant functional heads in our argumentation of verb movement.

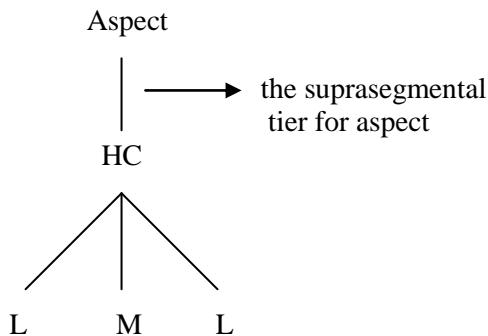
(23)

a.



INDEX1 YESTERDAY SCHOOL GO [asp: complete]
 "I went to school yesterday."

b.



(Representation adapted from Sandler and Lillo-Martin 2006)

Incomplete aspect is expressed by repetitive path movement of the verb, which is shorter than the path movement of the bare form of same verb. (24) illustrates a verb inflected for incomplete aspect:

(24)



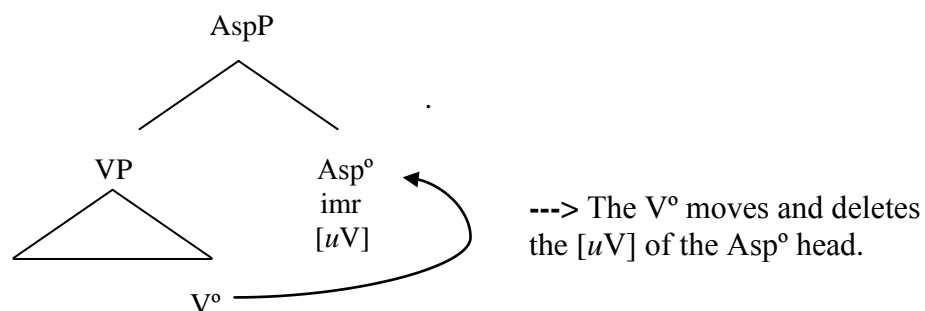
INDEX1 NOW SCHOOL GO [asp: incomplete]
 "I am going to school now."

(23a) is a morpho-phonological representation of the association between the aspectual inflection and the bare form the verb. It is observed in (23a) that aspect is related to the verb through an autosegmental tier as it changes the internal movement

of the bare verb form. The phonological L(ocation) M(ovement) and L(ocation) domain might be regarded as the prosodic domain relevant for the expression of Aspect and Tense (Gökgöz and Özsoy, in press). However, a detailed discussion of the interaction between Syntax and Prosody is beyond the scope of this study. So we leave the topic to further study.

As for the structural analysis of Aspect with respect to the verb, we propose that the aspectual re-organization which is rendered through the movement alteration of the bare form of the verb constitutes a functional head in syntax. We further propose that as a verbal functional category Asp° head has an $[\mu\text{V}]$ feature which needs to be deleted against a verbal element. (25) is a tree representation for (23a) and (24):

(25)



Movement should have a motivation on the basis of economy considerations of derivation (cf. Chomsky 1995). In (25) above verb movement takes place to delete the $[\mu\text{V}]$ feature of Asp° head. This $[\mu\text{V}]$ feature is the syntactic feature in the Asp° head, i.e. internal-movement-reorganization (imr). Thus, the V° moves to Asp° to check the uninterpretable $[\mu\text{V}]$ feature of Asp° in syntax and when the derivation is sent to PF after Spell-out, phonology reflects the movement of the Verb to Aspect through the association of the ‘imr’ to the LML base form of the Verb. In other words, we propose that there is Verb movement to the Asp° head in TID syntax

yielding head-to-head adjunction, which has a phonological reflex on the verb in PF, i.e. internal movement reorganization of the base form⁶.

3.3.2 Tense

Tense is expressed nonmanually, specifically by a single⁷ or repetitive head-nod, where the presence or absence of repetition signals the distinction between Future and Past interpretations.

We maintain that the evidence for the TP projection is represented by the presence versus absence of a nonmanual marker accompanying these manual aspectual expressions. Thus, the nonmanual marker head-tilt is taken as a phonological reflex of the syntactic T°.

Future in TĪD is expressed by a repetitive head-nod accompanied with the repetitive hand movement of the base verb form. In the absence of the head-nod, repetitive hand-movement of the verb, on the other hand, expresses Present indicating that the nonmanual marker, i.e. repetitive head-nod and manual reorganization might be distinctly articulated resulting in distinct semantic properties. Therefore, we take the absence of head-nod while expressing Present as evidence that Tense and Aspect are distinct functional projections in TĪD clause structure. Hence, the evidence for the independent nature of TP is presented by the fact that the manual aspect marker, i.e. internal movement reorganization of the verb, can co-

⁶How the phonological mapping from syntax can be represented in more formal terms is beyond the scope of this study as one has to look first at relevant phonological domains, i.e. prosodic grouping, for TĪD and see if such a mapping would be relevant for any prosodic grouping or not. The reader is referred to Reilly, McIntire and Bellugi 1990; Wilbur 1991; Nespor and Sandler 1999; Sandler and Lillo-Martin 2006 for the discussion of nonmanual markings as prosodic/intonational markers in sign languages.

⁷The reader is referred to Grose (2003) who relates single head-nod to past tense in ASL. Kubuş and Rathmaan (2009) relate a mouthing nonmanual marker to Tense in TĪD. As we have not encountered this marker in our database, we refer the reader to their study for a detailed analysis of it.

(27)



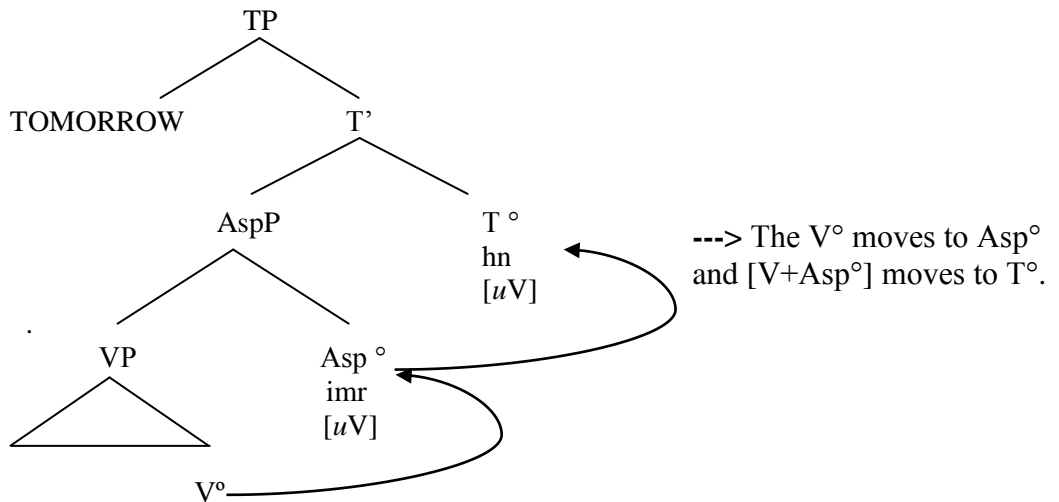
INDEX1 YESTERDAY SCHOOL GO [asp: completive]
 "I went to school yesterday."

We argue that since there are distinct markers for Tense and Aspect, there should be distinct functional projections in syntax⁸. Therefore, based on the indirect evidence presented by the contrast between (24) and (26) on the one hand and the direct evidence presented by (26) and (27) on the other, we propose that Tense and Aspect are distinct functional projections in TID. (28b) is the tree representation of a clause whose verb is inflected for Past Tense as well as Completive Aspect:

(28)

a. INDEX1 TOMORROW SCHOOL hn
 "I will go to school tomorrow." GO [asp: incomplete]

b.



⁸I would like to thank Meltem Kelepir-Wood for suggesting this expression which formulates our ideas in a nutshell.

We propose that T° head, which is occupied by the nonmanual marker ‘hn’, has a strong uninterpretable [uV] feature which needs to be deleted against a verbal element. In such dependence, the V° moves to Asp° and the [$V^{\circ}+ Asp^{\circ}$] moves to T° to check and delete the respective [uV] features.⁹

A remark is in order now. Ouhalla (1991) proposes the presence of an ASP(ect) parameter in UG (29):

(29) The ASP parameter

- (i) ASP is verbal (i.e. [+V])
- (ii) ASP is nominal (i.e. [+N])

According to Ouhalla, languages such as Chichewa and Kinyarwanda have the value (i); however, languages such as Swahili and English have the value (ii). He argues that in (i)-type languages Aspect and Tense are expressed as a synthetic morphological form whereas in (ii)-type languages they display a periphrastic form. Since the movement of [$V^{\circ}+Asp^{\circ}$] unit to T° satisfies the m-selectional property of the T° head without resort to the insertion of a dummy verbal element to T° , we maintain that ASP is verbal in TID in the light of Ouhalla’s ASP parameter¹⁰. Asp° being [+V], the [$V^{\circ}+Asp^{\circ}$] complex remains [+V], which is eligible to check the [uV] of the higher functional head T° .

⁹Note in (28) that Tense is hierarchically higher than Aspect. In order to check the ordering between these functional heads one has to consider the ordering of more than one XP, one of which is related to, for instance incomplete aspect and the order one future tense. For our study, we assume the ordering that Tense is higher than Aspect. Note also that $AspP$ seems to be projected all the time since there still seems to be internal movement reorganization on verbs even when there is no nonmanual marker accompanying this organization i.e., present interpretation where there is no nonmanual marker but there is still internal reorganization of the verb.

¹⁰ This also explains why aspectual inflection is observed only on the Verb in TID as discussed in 3.1.1.

Time adverbials such as TOMORROW (26) and YESTERDAY (27), which anchor the predicates in time, occur in the specifier position of the relevant TP in the configuration in (28). The occurrences of the manual and nonmanual markers and their interpretations are schematized in Table 1.

T°	Asp°	Interpretation
1) T° [single head-nod]	Asp° [single hand movement]	Past-Completive
2) T° [repetitive head-nod]	Asp° [repetitive hand movement]	Future-Incompletive
3) T° [phonologically null morpheme]	Asp° [repetitive hand movement]	Present-Incompletive

Table 1: The interaction of T and Asp heads

T° can contain (i) a single-head nod (Past), (ii) repetitive head-nod (Future) or (iii) a phonologically null morpheme (Present) and the Asp° can contain single or repetitive hand movement. The interactions of these categories yield Past-Completive, Future-Incompletive and Present-Incompletive as far as our data shows.

3.3.3 The Expression of Modality: Mod° as a Lexical Head

We identified four modal markers for TİD in our database. Three event modality markers (i.e. obligation, necessity, and volition (Palmer 2001)) exist in TİD. These are LAZIM ‘NEED’, ZORUNDA ‘HAVE TO’ and İSTE ‘WANT’. In addition, another modality marker is BİL ‘KNOW-HOW-TO-DO’, which expresses both epistemic and deontic modality. The markers for obligation and epistemic/deontic modality seem to be direct borrowings from spoken Turkish in that the first is expressed by an initialized L letter which has been lexicalized through the addition of a path movement to the initial L letter after the spoken modality marker ‘lazım’ (cf. Kubuş 2008). The epistemic deontic modality marker BİL ‘KNOW-HOW-TO-DO’ is

homophonous with the verb BİL ‘KNOW’ which parallels the homophony between the two forms in the surrounding language, i.e. Turkish.

Palmer (2001) categorizes modality into two broad categories: (i) propositional modality and (ii) event modality. With respect to event modality, Palmer further distinguishes between deontic and dynamic modality. Event modality indicates events that are not actualized or taken place but are potential events (Palmer 2001). Conditions for the actualization of the event are external to the subject for dynamic modality. The modal verbs LAZIM ‘NEED’ and ZORUNDA ‘HAVE TO’, which is derived from the TİD lexical item ZOR ‘DIFFICULT’ through the addition of a forward curved path movement, are dynamic modality markers in TİD. (30) illustrates a clause with LAZIM ‘NEED’ and (31) illustrates a clause with ZORUNDA ‘HAVE TO’:

(30)



INDEX2 TODAY TURKISH LANGUAGE SIGN COURSE GO NEED
 “You must to go to the TİD course today.”

(31)

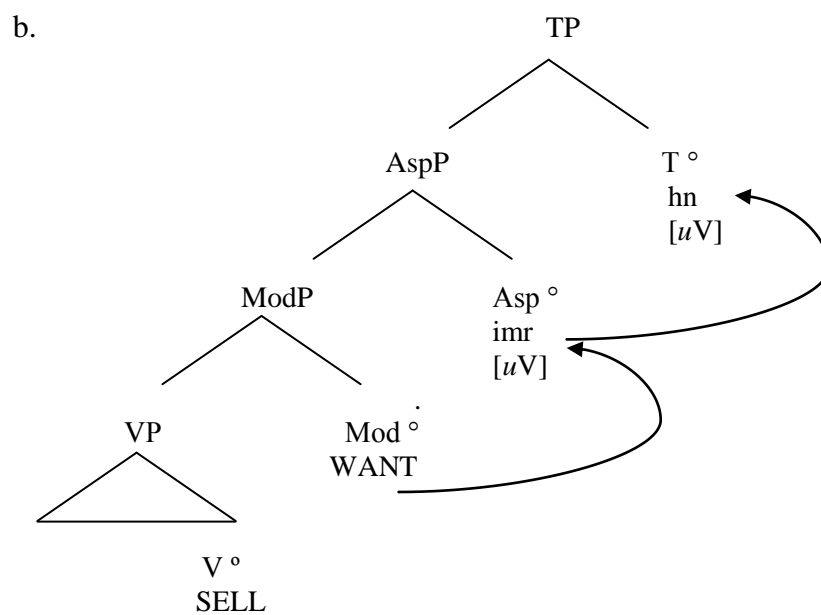


YES ALL SAFETY^BELT WEAR HAVE TO
 “Yes, everyone has to wear a safety belt.”

Conditions for the actualization of the event are internal to the subject for deontic modality. The verb İSTE ‘WANT’, which is signed with 5 extended fingers and the

Then, what is inflected for aspect and tense is the modal marker rather than the lexical verb. The lexical verb is realized in the bare form. In the light of this fact, we conjecture that the manual Modal marker creates its own extended verbal domain and takes the lexical verb as its complement. This is represented in (35b):

- (35) a. hn
 BECAUSE SCREEN CARD SELL WANT [asp: completive]
 “Because I wanted sell the screen card.”



The reason why the lexical verb is not inflected for aspect is obvious in (35a). If the T° and the Asp° have strong uninterpretable $[uV]$ features, as proposed above, they attract the closest verbal category (cf. Chomsky 1995; Rizzi 1990, 2001), which is also in accordance with the locality condition of head movement (Travis 1984). Therefore, the closest verbal category, i.e. ISTE ‘WANT’, moves to Asp° and the $[\text{Mod}^\circ + \text{Asp}^\circ]$ complex moves to T°. The modal marker, which is closer to Asp° head than the lexical verb, is thus attracted to Asp° whereby the Asp° checks its uninterpretable $[uV]$ feature and then the $[\text{V}^\circ + \text{Asp}^\circ]$ complex moves to T° whereby

the uninterpretable [uV] feature of T° is deleted. As a result, the modal marker gets the aspect and tense inflection and the lexical verb survives in its bare form.

To sum up, when the nature of the projections¹¹ above the VP domain in TĪD are contrasted, AspP and TP differ from ModP in that the latter is expressed by a manual marker, while the former are expressed nonmanually/suprasegmentally and they are related to the lexical verb/modal verb through an autosegmental tier in PF. In order to explain the fact that the verb and the functional heads, i.e. *imr* and *hn*, are expressed simultaneously in PF, we proposed head movement of the verb to these heads and a resulting head-to-head adjunction.

3.3.4 Negation

As for Negation, it is expressed with both manual and nonmanual markers in TĪD.

The negative head tilt, head shake and eyebrow raising constitute the nonmanual component of negation. We will discuss head-tilt and eye-brow-raising in our study, leaving the implications of the spreading patterns of head-shake to further inquiry.

The manual marker of negation is a free particle or a clitic which have the same hand

¹¹Based on the tendency to have Completive Aspect + Past Tense and Incompletive Aspect + Future Tense markers expressed simultaneously on the lexical/modal verbs in TĪD, one could argue that these markers are hosted in the same functional head. In that case, one could suggest that there is an amalgamated/hybrid TAM (p.c. with Aslı Göksel) head in TĪD syntax which hosts Aspect, Tense and Modality markers. However, in our database we have clauses in which Aspect is expressed without a Tense marker as in (24), which supports the argument that Tense and Aspect should be proposed as distinct functional projections in TĪD clause structure. The proposal of an amalgamated/hybrid TAM head in syntax might be problematic for other considerations as well. It seems that we need to propose hierarchical ordering among these heads to capture the interaction of the Aspect with the Verb and Tense with a higher functional projection, i.e. Finiteness. Aspect is about the internal organization of the event, i.e. the nature of the realization of the event. Therefore, it seems reasonable to argue that Aspect should be closer to the verb if semantic interpretation depends on syntactic proximity. In the same line of argumentation, we can suggest that Tense and Finiteness should be close to each other as Tense is proposed to inherit features from Finiteness (Chomsky 2005). Future inquiry which investigates the combination of Past with Incompletive Aspect as well as Future with Completive Aspect will shed further light on the discussion of the nature of Tense and Aspect projections in TĪD syntax. For now, depending on the fact that the expression of Aspect does not need a Tense marker (24) above, we propose that Aspect and Tense are distinct functional projections and Tense is higher than Aspect due to semantic proximity of the Verb and Aspect vs. Tense and Finiteness.

configuration but differ in the place of articulation and the degree of diffusion into the preceding verb (cf. Zeshan 2003, 2004)¹².

In the next chapter, we will first describe Negation and then start discussions on the implications of the manual and nonmanual markers of Negation to syntactic organization of TĪD. In Chapter 5, we will relate the IP and the CP domains to Negation.

¹²Negative head-shake is also observed over sign sequences. The spread area of head-shake tends to co-occur with horizontal signs. The nonmanual configuration seems to depend on the phonological environment where negation occurs. But further study is needed to express the dependence in detailed phonological terms. In our study, we will discuss negative head-tilt and eye-brow-raising and leave the status of head-shake to further inquiry.

CHAPTER FOUR

NEGATION IN TİD

After the description and structural discussions of the proposed functional projections TP and AspP in TİD, we now turn to the discussion of another verbal functional category, namely Negation in this language. We will first give a description of Negation in TİD. Some initial remarks on the structural discussion of negation will be made at the end of the chapter where we will discuss the implications of nonmanual marking for Negation on the organization of the Verb and the extended projections of it, i.e. VP, IP and CP.

Crosslinguistically, it has been observed that negation in sign languages is expressed through a combination of facial expressions/head movements (nonmanual markers) and a manual sign (Antzakas 2002 for Greek Sign Language; Zeshan 2004 for various sign languages; Pfau and Quer 2002, 2007 for German Sign Language and Catalan Sign Language; Meir 2006 for Israeli Sign Language; Kubuş 2008 for Turkish Sign Language). In this sense Zeshan states that “a combination of manual and nonmanual negation is probably the most common strategy crosslinguistically, followed by a headshake only negation ... Manual only negation occurs more rarely and is uncommon or impossible in several sign languages (Zeshan 2004, p. 18).”

Negation has both manual and nonmanual components in TİD as well. In the following sections 4.1 and 4.2, we will describe manual and nonmanual markers of negation in TİD.

4.1 Manual Expression of Negation in TİD

In TİD, manual negative markers are expressed with either one hand or two hands, where the distribution is determined by the nature of the sign preceding negation, i.e. whether it is two-handed or one-handed. Zeshan (2003) classifies the TİD manual negative signs into the following categories:

- i. DEĞİL ‘not’
- ii. OLMAZ ‘cannot’
- iii. HAYIR ‘no’
- iv. YO ‘no, no’

Regarding the classification above, Zeshan notes that DEĞİL has a free form and a cliticized form¹³. She observes that the nature of wrist bending, duration of the sign, starting location and place of articulation are the criteria that distinguish the free form from the clitic. We will discuss our observations drawing on the criteria above as well as our own parameters.

¹³We make reference to Zeshan (2004) while we call the shorter form as a clitic. Zeshan discusses this marker in full detail and compares it to Finnish Sign Language Neg marker which she takes as a suffix. We cite here her criteria and take this negative marker as a clitic in our study:

NEGATIVE CLITIC; Türk İşaret Dili ^NOT	NEGATIVE AFFIX; Finnish Sign Language -neg
co-existing free form	no co-existing free form
variation between free form and clitic form	no variation between free and bound form
comparatively more productive form more fully specified	comparatively less productive form less fully specified
often two separate reduced movements	one main movement
no handshape assimilation	handshape assimilation possible
full compositionality of meaning	changes in meaning possible
no formational changes other than reduction	formational changes in stem and affix

(Zeshan 2004, p. 49)

For our study, we will be concerned with the following manual negative markers. The items below are grouped according to hand configuration, movement of the hand and path of the movement:

- i. Five Fingers Selected – Hand Twist – Vertical Path
 1. negative particle (NEG)
 2. negative clitic (^NEG)
- ii. Five Fingers Selected – Hand Bending – Oval Path
 1. Negative existential (NEXIST¹⁴)
- iii. Other forms
 1. Hand Configuration of the Base Sign – Reverse Movement Direction of the Base Sign – The Same Path Movement with the Base Sign: internal re-organization (SIGN[NEG])
 2. One Finger Selected – Side to Side Movement – Horizontal Path (NO)
 3. Two Hands Selected – Palms Facing up – Arc Movement (NEGG)
 4. Thumb and Index Finger Selected – Single Horizontal Movement (NOT-AT-ALL)

As Zeshan indicates, negative signs tend to be clause final crosslinguistically. This is also the case for TID. All of the forms above tend to be clause final with the nonmanual expression spreading over post-verbal constituents in those cases where the structure is not V-final.

4.1.1 Five Fingers Selected – Hand Twist – Vertical Path

Zeshan (2004) observes that there is a crosslinguistic tendency for a basic negative particle to occur frequently. She notes that across sign languages there tends to be a negative particle that gives ‘basic clause negation’. She also notes that if there is a clitic similar to a free negative particle, these forms tend to co-exist. In our study, we observe that a free particle for negation NEG, as well as a clitic ^NEG, exists in TID.

¹⁴ I wish to thank my advisor Prof. Dr. Sumru Özsoy for coining the term NEXIST.

With respect to the basic hand configuration and hand movement, these two manual negative markers are identical. However, the two differ on the duration and place of articulation phenomena. The free form is longer in duration. It has a well-defined place of articulation, a neutral position in front of the torso while the clitic assimilates in the place of articulation for the base sign in addition to having a tendency to be shorter in duration. The following chart shows how the two forms differ and on what grounds they are similar (see also Zeshan 2004):

	FREE FORM	CLITIC
HAND CONFIGURATION	five fingers selected open hand	five fingers selected open hand
HAND MOVEMENT	a strong hand twist	underspecified for the strength of the hand twist strength of the twist depending on the movement configuration of the base sign
PATH MOVEMENT	strong vertical path	vertical path strength of the vertical path movement depending on the path movement of the host sign
PLACE OF ARTICULATION	middle torso neutral space	assimilation of the ending location of the host sign

Table 2: The Free Negative Particle and Negative Clitic compared in hand configuration, hand movement, path movement and palace of articulation parameters

As can be observed in Table 2, what distinguishes the two forms with the same hand configuration as a free particle or a clitic is the degree of morpho-phonological autonomy. The particle has its independent morpho-phonological status. Its

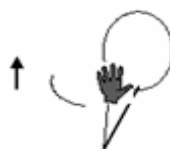
realization is specified distinctively (36). On the other hand, being underspecified for the strength of hand twist and path movement as well as place of articulation the clitic is dependent on the host sign (37):

(36)



Free Particle NEG

(37)



Clitic ^NEG as in KNOW^NEG

The free particle is articulated in front of the torso at a neutral space (36). Its duration is longer than the clitic. The clitic is articulated where the base sign KNOW ends in (37). As a result of the place of articulation of the base sign, the clitic is shorter in the duration for its movement. The vertical path movement of the clitic is similar to that of the free particle's as a result of the vertical nature of the base sign it attaches to in (38):

(38)



INDEX

WORD

KNOW^NEG

		_____ht
		_____br
INDEX1	KELİME	BİL^NEG
INDEX1	WORD	KNOW^NOT

'I didn't know the words.'

(39)



INDEX1 SPEAK ADVANCED INDEX1 NEG

				<u>ht</u>
				<u>br</u>
INDEX1	KONUŞ	İLERİ	INDEX1	NEG
INDEX1	SPEAK	ADVANCED	INDEX1	NEG

'My speaking is not advanced'

Another evidence for the free particle's autonomous morpho-phonological status follows from the fact that a specific suprasegmental nonmanual negative marker, namely head tilt, spreads over the free negative particle but not on any of the preceding signs (39) (see also Zeshan 2004 and 3.1.2 in this study). On the other hand, this suprasegmental negative marker has scope over the base sign and the clitic as marked with a rectangle in (40):

(40)



→ Head-tilt is over the KNOW^NEG complex.

The free particle is also used to negate locative sentences as in (41) and non-verbal predicates as in (42):

(41)



INDEX-a NEG

	<u>ht</u>	
	<u>br</u>	
INDEX-a	NEG	
HERE	NEG	

“It is not the case here.”

(42)



DEAF ALL SIGN FULLY-FLEDGED NEG

				<u>ht</u>	
				<u>br</u>	
İŞİTME-ENGELLİ	HERKES	İŞARET	GELİŞMİŞ	NEG	
HEARING-IMPAIRED	ALL	SIGN	FULLY-FLEDGED	NEG	

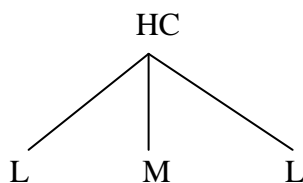
“As for all of the deaf people, not everybody’s signing is fully developed”

Zeshan (2004) observes that crosslinguistically there are irregular negative markers such as clitics and affixes of varying degrees of productivity. The motive why she chooses to call these markers as irregular is that they do not show consistency for and applicability to all related signs/sign groups within the respective sign languages they appear. On the other hand, she notes that cliticization of the negative particle in TİD is an exception to her observation that clitics are irregular in their behavior. She observes that cliticization of the negative manual sign is a widespread and fully productive morphological process in TİD; it is regular and the result of cliticization is fully predictable when compared to a case of irregular manual negative marker such as the negative suffix in Finnish Sign Language.

As for the formational characteristics of the negative clitic in TID, Zeshan argues that the clitic assimilates into the place of articulation of the host it attaches to. We agree with Zeshan in the sense that there is an instance of assimilation into the place of articulation of the host sign as indicated on the chart above. Zeshan also holds that this is an instance of assimilation of location and the assimilation depends on where the host sign ends. In parallel to her observation, we want to remark that the negative clitic does not assimilate to the whole place of articulation but only to the ending location of the host sign.

According to the Hand-Tier Model of sign language phonology (Sandler and Lillo Martin 2006), signs have internal structure. What looks like a Semitic template below shows us that signs have a starting location L, a movement feature M and an ending location L. HC stands for hand configuration (43):

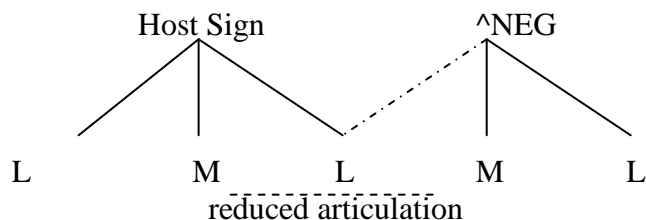
(43)



To be precise in our observations about the place of articulation of the negative clitic, we suggest that the negative clitic assimilates into the ending location of the host sign with phonetic consequences. It is true that the negative clitic starts at the location where the host sign ends. However, as Zeshan (2004) also indicates, the movement of the host sign as well as the clitic is reduced in duration. In order to account for this observation, we propose that the common location which the clitic

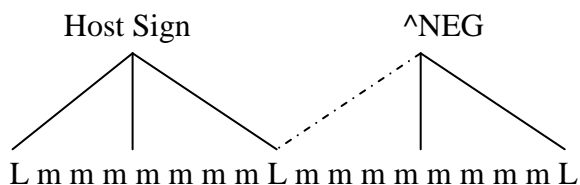
inherits from the host sign might be the reason for the reduction of the duration of the clitic and the sign (44):

(44)



In examining the phonological representation above, the phonetic consequences of clitic assimilating into the ending location of the host sign needs to be kept in mind. The ending location of the host sign is where the assimilation is perceptually most salient. However, as signs are not composed of static locations and movement is on from the starting location to the ending location (Brentari 1998), it seems possible that assimilation starts at some movement position before the ending location of the host sign (45):

(45)



We can take the underlined area as the locus of assimilation. Under this representation, during the transition from the host sign to the clitic some movement slots might get shortened in order to make the place of articulation assimilation phonetically more salient. Hence, we have a reduced articulation of both the host and

the clitic. Be it the tentative account above applicable to all the cases of HOST^CLITIC complex in TİD, one thing is obvious; that is, there is some degree of phonological diffusion between the host and the clitic (Zeshan 2004). This diffusion might be responsible for the reduced movement of both the negative clitic and the host sign. In addition, the fact that a specific nonmanual marker of negation, namely head tilt, spreads over the HOST^CLITIC complex rather than spreading on the clitic alone might be revealing about the diffusion of HOST^CLITIC complex (46).

Suprasegmentally, the whole complex seems to be behaving as a single sign in the same manner as the free particle is treated by the negative head-tilt:

(46)



TURKEY ALL GO GET-ASHAMED^NEG

TÜRKIYE HERKES GİT ^{ht}UTAN^NEG
 TURKEY ALL GO GET-ASHAMED^NEG
 “People in Turkey are increasingly don’t get ashamed.”

This regular morphological process of negative cliticization is fully productive and the result of it is fully predictable. It seems that the negative clitic can be attached to all regular verbal predicates to produce predictable meanings.

As can be observed, with all of the examples of this category of manual negation there is a specific nonmanual marker, head-tilt which autosegmentally attaches to the free particle NEG or the NEG^SIGN complex. The implications of this spreading will be discussed in Section 4.3 about the syntactic implications of

negative nonmanual marking where we will relate the spread of head-tilt over VERB^NEG in negative sentences to verb movement due to the [μ V] in the Neg^o head.

4.1.2 Five Fingers Selected – Hand Bending – Oval Path

The most striking similarity among the sign languages studied in Zeshan (2004) is that 29 of these languages have negative existential forms. Interestingly enough, as a consequence of their frequency and cognitive salience, as Zeshan (2004) puts it, the negative forms of the existential are usually suppletive forms. TID abides by this generalization. The negative form for the existential sign (47) is a suppletive form (48):

(47)



Existential EXIST

(48)



Negative Existential NEXIST

As can be observed in (48) above, all the five fingers are selected for the negative existential sign. Its place of articulation is different from that of the existential sign¹⁵.

The existential sign is articulated on the torso while the negative existential NEXIST

¹⁵ It is possible that there might be some kind of phonological relevance for the two signs, EXIST and NEXIST in TID. Note that in both of these signs all the five fingers are selected. In addition, these selected fingers are extended /open rather than taking a closed position. The place of articulation for these two signs is different, EXIST being anchored to the middle of the torso and NEXIST starting from a slightly extended position from the chin and going somewhat downwards in a curved path movement. The possibility of NEXIST being derived from EXIST and by time shifting to a higher place of articulation while losing the phonological feature of contact with the body would be an interesting possibility. Diachronic evidence is necessary to test this hypothesis.

starts slightly in front of the chin and has a downward oval path movement. In contrast to the negative particle, NEXIST form has a smoothing bending movement as a result of its oval path (49):

(49)



INDEX1 KÜÇÜK OKUL A NEXIST

			$\frac{ht}{br}$
INDEX 1	KÜÇÜK	ANAOKULU	NEXIST
INDEX1	SMALL	KINDERGARTEN	NEXIST

“While I was a small child, there wasn’t a kindergarten.”

Similar to NEG and ^NEG discussed in 4.1.1, the negative existential form negates the whole sentence as well. Another similarity is that head-tilt spreads only over this marker in the string. So far, the interaction of segmental and suprasegmental negative markers tells us that head-tilt has a local spreading area. Implications of this spreading pattern will be discussed in section 4.2.

4.1.3 Other Forms

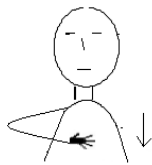
There are other manual forms of expressing sentential negation. These forms are less frequent than the free negative particle, negative clitic and negative existential. However, they are sentential negative markers as they negate the whole sentence rather than smaller units of grammatical organization. Furthermore, the nonmanual

marking for negation i.e. head-tilt, head-shake and brow-raising hold for these categories as well. Therefore, we want to describe these forms as well.

4.1.3.1 Hand Configuration of the Base Sign – Reverse Movement of the Base Sign – The Same Path Movement with the Base Sign

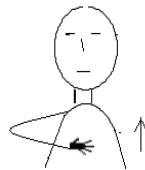
Crosslinguistically, as Zeshan (2004) puts it, negation is sometimes rendered through a change in the internal organization of a base sign. The pair of signs İSTE ‘WANT’ and İSTE[NEG] ‘WANT[NEG]’ shows this process of internal reorganization (50) and (51):

(50)



İSTE ‘WANT’

(51)



İSTE[NEG] ‘WANT-NOT’

(52)



INDEX1

DEAF

ÜZÜL

WANT[NEG]

INDEX1
INDEX1

İŞİTME-ENGELLİ
HEARING-IMPAIRED

ÜZÜL
GET-UPSET

^{ht}
İSTE [NEG]
WANT[NEG]

‘I don’t want the deaf people to get upset.’

While the base sign *ISTE* has an upward-downward movement direction, the negative form *ISTE*[NEG] (52) has the reverse of this movement direction¹⁶.

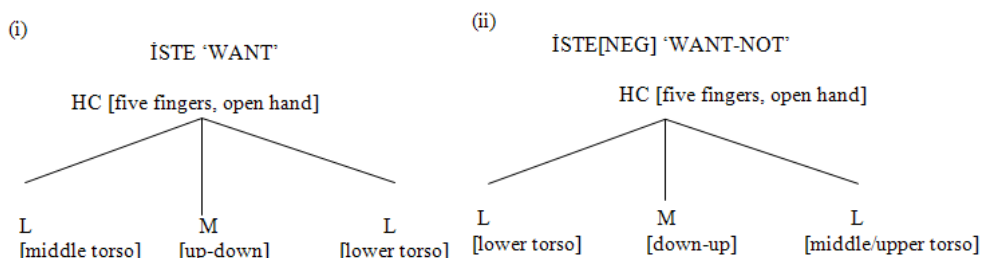
We have already observed that the nonmanual negative marker spreads over the last sign or sign complex in sections 4.1.1 and 4.1.2 below. We observe the same spreading pattern for this form as well (53).

(53)



The spreading of head-tilt over the last sign/sign complex seems to be a regular phenomenon regardless of the manual expression of negation, i.e. even in the case of irregular negative forms.

¹⁶ The hand configuration for both of these signs is the same. The thumb makes a touch on the torso for the positive form and the small finger touches the torso for the negative form as a result of the movement direction of the respected forms (i)-(ii):

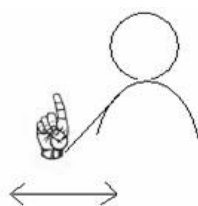


For both of these signs all the five fingers are selected and the hand is open (i) and (ii). Furthermore, the beginning location of the positive sign and the ending location of the negative as well as the ending location of the positive sign and the beginning location of the negative sign is almost identical. As we argued above, the only difference between the two signs is that of the path of the movement and a resulting anchoring of the thumb or the small finger. Therefore, it seems that movement path in this case of manual negation might be functioning as negative morpheme.

4.1.3.2 One Finger Selected – Side to Side Movement – Horizontal Path

The sign NO in TID is a free form. The index finger is selected for this form. The index finger moves side to side on a horizontal path with an accompanying head shake (54):

(54)



hs
NO

This free form is used for prohibitions and for indicating dissent. The nonmanual marker head-shake spreads over this single sign similar to what we have observed in head-tilt and the negative forms above.

4.1.3.3 Two Hands Selected – Palms Facing Up – Arc Movement

Negation is also expressed with a gesture-like two handed negative sign in TID. For this sign both of the hands are selected. The sign has a vertical arc movement. At the end of the arch movement both of the palms face upwards. It might be accompanied by a head shake or an eye-brow-raising or a combination of the two. It might follow a verbal or a nonverbal predicate. When this sign follows a nominal predicate, it behaves as a free form (55). When this sign follows a verbal predicate, it tends to cliticize to the preceding verb (56) and (57):

(55)



SIGN NEGG

İŞARET br
 NEGG
SIGN NEGG
“It is not the sign.”

(56) ÇÜNKÜ SU HAVA YAĞMUR br
 BECAUSE WATER AIR RAIN GROW
 “Because, there is no water in the air for it to rain.”

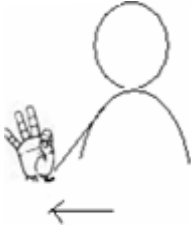
(57) ŞİMDİ ORGAN hs
 NOW ORGAN br
 OL^NEGG
 BE^NEGG
 “Now the organ is not growing.”

For this type of negative marker, the nonmanual negative expression head-shake or brow-raising spreads over the last sign or sign complex. This pattern abides by what we have observed for head-tilt so far.

4.1.3.4 Thumb and Index Finger Selected – Single Horizontal Movement

A zero-like sign is also used for clausal negation in TİD. For this sign thumb and index finger are selected. The sign has a single horizontal sideward movement (58). This sign might be articulated on one or two hands depending on the position of the non-dominant hand on the flow of signs. The sign means HİÇ ‘NOT-AT-ALL’ and has the capacity to negate the whole sentence (59):

(58)



NOT-AT-ALL

(59)



INDEX1

SPEAK

NONE

hs

br

INDEX1

KONUŞ

HİÇ

INDEX1

SPEAK

NOT-AT-ALL

“I can’t speak at all.”

As a result of the horizontal path movement of the sign, the nonmanual marker accompanying this form is head-shake which starts on the verb preceding NOT-AT-ALL as opposed to what we have observed for head-tilt which spreads over the last SIGN or SIGN^NEG complex.

4.2 Nonmanual Expression of Negation in TİD

In this section we will describe three nonmanual markers of negation in TİD. Having laid the distribution of these markers in this section, we will pursue the syntactic implications of these markers in the following section.

Major nonmanual devices to express negation in our data of TİD are head-tilt, head-shake and eye-brow-raising (see also Zeshan 2003, 2004). There are other

nonmanual devices to express negation as well. These are forward/backward-body-lean and frowned-eye-brows, which are out of the scope of this study as they seem to have other functions in addition to negating a sentence. Zeshan (2003, 2004) observes that puff cheeks with subsequent release of air can also function as a nonmanual negative marker. She notes that this marker's grammatical status needs to be further investigated. There is no instance of this nonmanual marker in our data. For our study, we will mainly deal with (i) head tilt, (ii) head shake and (iii) eye-brow-raising and we then relate (i) and (iii) to the morpho-syntactic organization in T1D.

4.2.1 Head-tilt

Backward-head-tilt tends to have a narrower spread area than both head-shake and eye-brow-raising. One can argue that this might be due to the restrictive nature of this nonmanual marker. It would not be possible for one to repeat head-tilt for several times over a string of signs (Zeshan 2004). However, one can also look at the restricted spread area of this marker as a syntactic organizer as well. We will discuss this possibility in the next section.

For the distributional behavior of head-tilt, it is observed that head tilt has spreading scope over the very last sign (60) and (61) or sign complex in the form of VERB^NEG (62):

	$\frac{\text{ht}}{\text{br}}$	
(60)	MERAK	NEXIST
	CURIOSITY	NEXIST

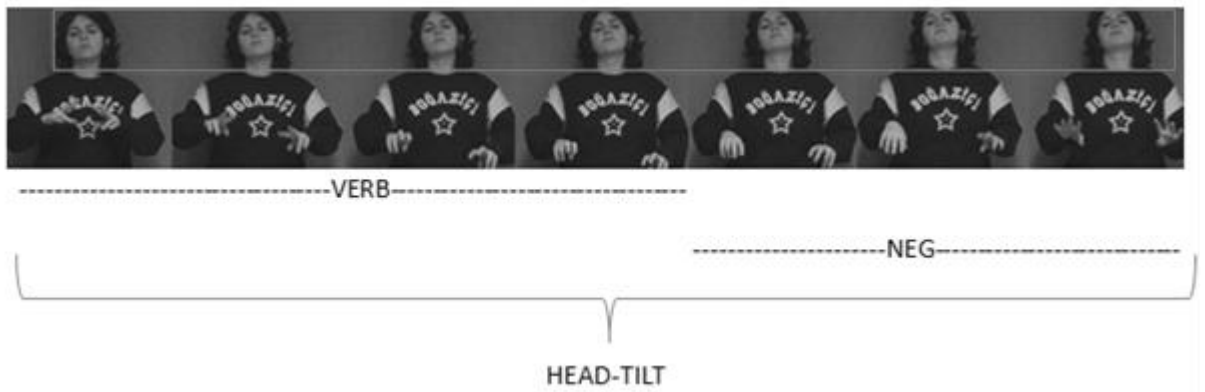
“There is no excitement (about the sign).”

(61) $\overbrace{\text{BEN İŞİTME-ENGELLİ ÜZÜL İSTE [NEG]}}^{\text{ht}}$
INDEX1 DEAF GET-UPSET WANT[NEG]
“I don’t want the deaf to get upset.”

(62) $\overbrace{\text{KONUŞMA SEV^NEG}}^{\text{ht}}$
SPEAK LIKE^NEG
“I don’t like speaking”

When the last sign in a string of signs is a free negative form, as in (60) head tilt spreads over this free form only. On the other hand, if the last sign is a VERB^CLITIC complex as in (62) or if there is an internal re-organization as in (61) head tilt spreads over these but not on any other preceding sign or signs. Spreading of head-tilt over VERB^NEG is shown in (63):

(63)



Note again in (63) that head-tilt spreads over the whole VERB^NEG complex. As we have already mentioned, this is evidence for treating VERB^NEG as a single phonological unit (Zeshan 2004) but the status of this unit in a possible prosodic hierarchy should be investigated for TİD (see Gökgöz and Özsoy in press). For our

study, we will be concerned with morpho-syntactic implications of this spreading pattern in Section 4.3.

4.2.2 Head-shake

Head-shake is able to take wider spreading scope than head-tilt. Similar to head-tilt, it can take scope over a single negative sign as in (64) and (65) or it can take scope over a VERB^NEG complex as in (66):

(64) $\frac{\text{hs}}{\text{br}}$
 NEG
 “It is not so.”

(65) $\frac{\text{hs}}{\text{NEXIST}}$
 “There isn’t any.”

(66) $\frac{\text{hs}}{\text{br}}$
 DOĞRU BİL^NEG
 TRUE KNOW^NEG
 “I don’t know whether it is true or not.”

While head-tilt does not spread over more than one SIGN or SIGN^CLITIC, head-shake can as in (67) and (68):

(67) $\frac{\text{hs}}{\text{br}}$
 İŞARET BİL^NEG HİÇ
 INDEX1 SIGN KNOW^NEG NOT-AT-ALL
 “I don’t know any sign.”

(68) $\frac{\text{hs}}{\text{HAYIR KONUŞ NEXIST}}$
 NO SPEAK NEXIST
 “No, I didn’t speak.”

As headshake has a horizontal path, it tends to take scope over NOT-AT-ALL forms¹⁷ as in (69) and (70):

(69) SES ÇIKAR hs
 SOUND UTTER NOT-AT-ALL HİÇ
 “I didn’t say anything.”

hs
br
 (70) INDEX1 KONUŞ NONE
 “I didn’t speak at all.”

Head-shake can also occur when there is no manual negative SIGN or SIGN^CLITIC complex at the end of a sentence (71). A similar spreading property is also observed in one instance for head-tilt but at this instance there is no manual sign whatsoever under head-tilt. Head tilt occurs without an overt sign (72):

(71) hs
 INDEX1 KONUŞ
 INDEX1 SPEAK
 “I don’t speak.”

(72) ht
 KONUŞ (no manual sign)
 SPKEAK
 “I don’t speak.”

Head tilt and head-shake never occur simultaneously. Neither do we observe any cases where they occur sequentially as in the hypothetical string in (73). There might be a phonotactic constraint preventing the co-occurrence of the two.

¹⁷ See also Zeshan (2004) for the distribution of head-shake in TİD.

(75) $\frac{\text{ht}}{\text{br}}$
 KONUŞ NEG
 SPEAK NEG
 “I don’t speak.”

(76) $\frac{\text{br}}{\text{INDEX1 İŞARET NEG}}$
 INDEX1 SIGN NEG
 “I don’t sign.”

Eye-brow-raising spreads over NEXIST but it doesn’t spread over any preceding sign or signs (77). In one instance, we observed that just before the NEXIST the signer makes a gesture-like negative sign. This negative gesture-like sign is accompanied by both mouthing and eye-brow-raising and eye-brow-raising extends to the end of the sentence (78):

(77) $\frac{\text{ht}}{\text{br}}$
 DOKTOR OKUL NEXIST
 DOCTOR SCHOOL NEXIST
 “There wasn’t a doctor at the school.”

(78) $\frac{\text{br}}{\text{ÇÜNKÜ SU HAVA YAĞMUR NEG [palms facing up + mouthing] NEXIST}}$
 BECAUSE WATER AIR RAIN NEG [palms facing up + mouthing] NEXIST
 “Because, no rain existed in the air.”

If there are any post-verbal signs after the manual negative forms, eye-brow-raising spreads over these signs as in (79), (80) and (81):

(79) $\frac{\text{ht}}{\text{br}}$
 ALIŞMIŞ NEG INDEX-PL
 USED-TO NEG INDEX-PL
 “Everybody is not used to it.”

_____ ht

_____ br

(80) ANLA^NEG INDEX3
 UNDERSTAND^NEG INDEX3
 “He doesn’t understand.”

_____ ht

_____ br

(81) INDEX1 KONUŞ INDEX1 ALIŞ^NEG HİÇ[mouthing]
 INDEX1 SPEAK INDEX1 GET-USED-TO^NEG NOT-AT-ALL[mouthing]
 “I didn’t at all get used to those people who spoke.”

Having discussed the description and distribution of nonmanual markers of negation in TİD, we proceed to discuss morpho-syntactic implications of these markers for this language.

4.3 (Morpho)syntactic Markers of Negation in TİD

In this section, we start discussing the structural implications of nonmanual markers of negation. These preliminary discussions will lead us to broader discussions of the clausal architecture of TİD in Chapter 5 which locates negation among the functional categories discussed in Chapter 3, i.e. the IP domain and questions discussed in Chapter 5, i.e. the CP domain.

In this sense, we will discuss the status of negative head-tilt and eye-brow-raising in TİD. We will first review two studies of negation by Pfau and Quer (2002, 2007) which discuss the syntax of negation in three sign languages, American Sign Language (ASL), Catalan Sign Language (Llengua de Signes Catalana: LSC) and German Sign Language (Deutsche Gebärdensprache: DGS). In all of these sign languages, as in every sign language studied so far, negation is marked through a combination of a manual and a nonmanual negative marker. However, the authors propose that despite surface similarities among these sign languages in the domain of

negation, there are crucial differences as regards the organization of NegPs in these languages. The negative head-shake in ASL is proposed to be a syntactic marker as it has to associate to constituents, i.e. V + Internal Argument, in the absence of a manual negative marker but the negative head-shake in Catalan Sign Language and German Sign Language is proposed to be a morphological marker as they tend to associate to the verb only in the absence of a manual negative marker (Pfau and Quer 2002, 2007).

The authors set up their study through giving the distribution of negation in these three languages which is cited below in (82), (83) and (84):

(82) hs
 JOHN NOT BUY HOUSE
 (ASL)

(83) hs
 SANTI CARN MENJAR NO
 (LSC)

(84) a. *MUTTER BLUME KAUF hs NICHT
 (DGS)

b. MUTTER BLUME hs hs NICHT
 (DGS)

In ASL and LSC, the nonmanual component of negation can be associated with the manual Neg marker only as in (82) and (83). However, this is not possible in DGS, i.e. head-shake must be related to the verb in DGS as in (84b).

When the manual negative marker is not present and negation is rendered through the nonmanual negative head-shake only, head-shake can occur over the verb only in LSC (85) and DGS (86). However, it cannot occur on the verb only in ASL (87):

- (85) SANTI CARN hs
 (LSC) MENJAR
- (86) MUTTER BLUME hs
 (DGS) KAUF
- (87) *JOHN hs
 (ASL) BUY HOUSE

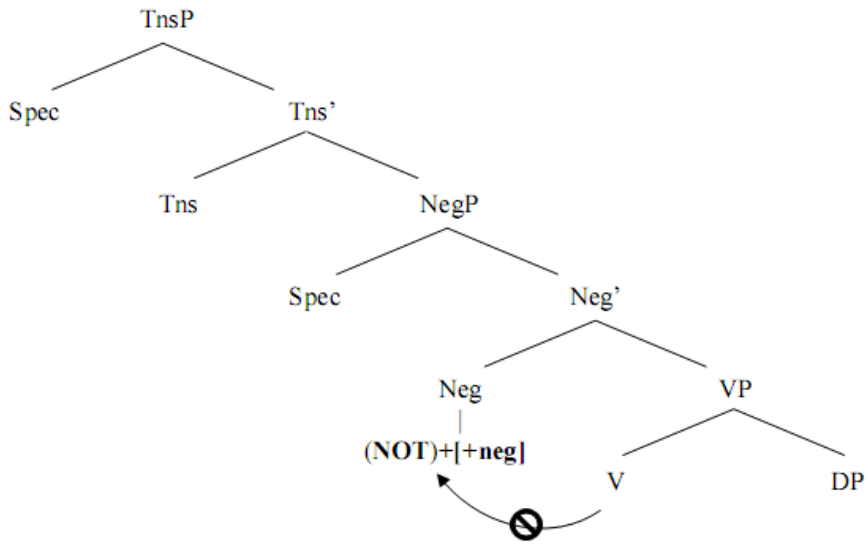
In the absence of a manual negative marker, the nonmanual head-shake has to spread over the internal argument in ASL (88). Its spread in LSC (89) and DGS (90) is optional:

- (88) JOHN hs
 (ASL) BUY HOUSE
- (89) SANTI hs
 (LSC) CARN MENJAR
- (90) MUTTER hs
 (DGS) BLUME KAUF

Drawing on the distribution of the nonmanual marking of negation through head-shake both in the presence and absence of a manual negative marker, the authors propose that morpho-syntactic nature of NegPs in these three languages are different.

Following Neidle et al. (2000), the authors assume for ASL that the manual negative marker NOT plus a syntactic [+neg] feature occupy the head of NegP in ASL (91):

(91)



The authors propose that the Verb never raises to the Neg^o head in ASL. When the manual negative marker NOT is present, [+neg] is associated with it (92). In the absence of NOT, the suprasegmental [+neg] feature cannot be associated with the Verb alone since the Verb never moves to Neg^o, hence the ungrammaticality in (93). The [+neg] feature spreads over the entire c-command domain of the Neg^o head when NOT is not present, which accounts for the grammatical sentence in (94):

(92) JOHN [_{Neg} [_{Neg} $\frac{\text{hs}}{\text{NOT}}$] [_{VP} BUY HOUSE]]

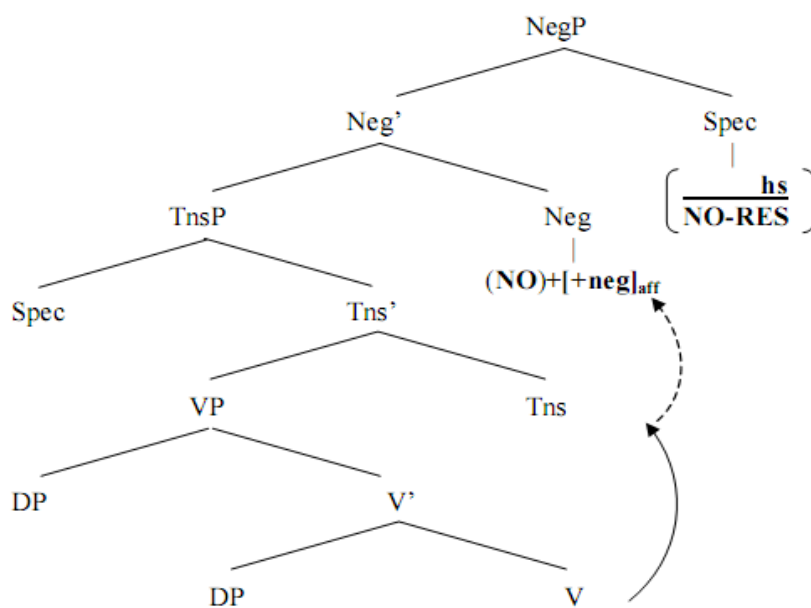
(93) *JOHN [_{Neg} [_{Neg} $\frac{\text{hs}}{+\text{neg}}$] [_{VP} BUY HOUSE]]

(94) JOHN [_{Neg} [_{Neg} $\frac{\text{hs}}{+\text{neg}}$] [_{VP} BUY HOUSE]]

Adopting the Neg-criterion of Haegeman and Zanuttini (1991), the authors assume that there is a covert negative operator in the specifier position of the Neg^o head in ASL.

As for LSC, the authors propose that the Neg° head contains a [+neg] feature and the manual NO similar to the proposal for ASL. The only difference between the IP domain of ASL and LSC is that of the ordering between T° head and Neg° head (after Zanuttini 1997 and Cinque 1999 for spoken languages as cited in Pfau and Quer 2002). In ASL T° selects Neg° (91) but in LSC Neg° selects Tense° (95):

(95)



At this point, the authors propose that there is a crucial difference between the [+neg] features in ASL and LSC. They argue that [+neg] is a featural affix in LSC (cf. Akinlabi 1996 as cited in Pfau and Quer 2002). As an affix, the [+neg] in LSC has to be attached to a manual sign in accordance with Stray Affix Filter. In the presence of NO, it attaches to this sign (96). In the absence of NO, the verb obligatorily moves to the Neg° head for the [+neg] feature to be attached to a manual sign (97):

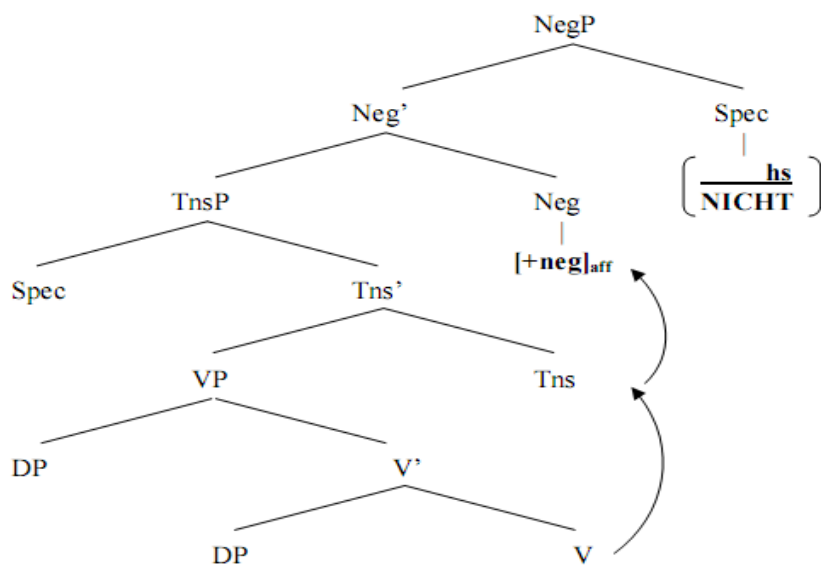
(96) SANTI [_{NegP} [_{VP} CARN MENJAR] [_{Neg} hs NO]]

(97) SANTI [_{NegP} [_{VP} CARN t_V] [_{Neg} [_V hs MENJAR]]]

This is the reason why head-shake on the verb only is grammatical in the absence of NO in LSC. If [+neg] were a syntactic feature in LSC as it is in ASL, the authors propose, there would be no need for the verb to move since the syntactic [+neg] feature, which is still suprasegmental, would be able to spread over the entire c-command domain of the Neg head. That's why the authors propose that the nature of [+neg] is different in ASL (syntactic) and LSC (morphological).

As for DGS, the authors propose that [+neg] element is affixal in this language similar to LSC. On the other hand, there is a difference in the position of the manual Neg marker, NICHT. They propose that it occupies the Spec-NegP in this language (98) as opposed to NOT in ASL and NO in LSC, which are in the Neg° head in these languages (91) and (95).

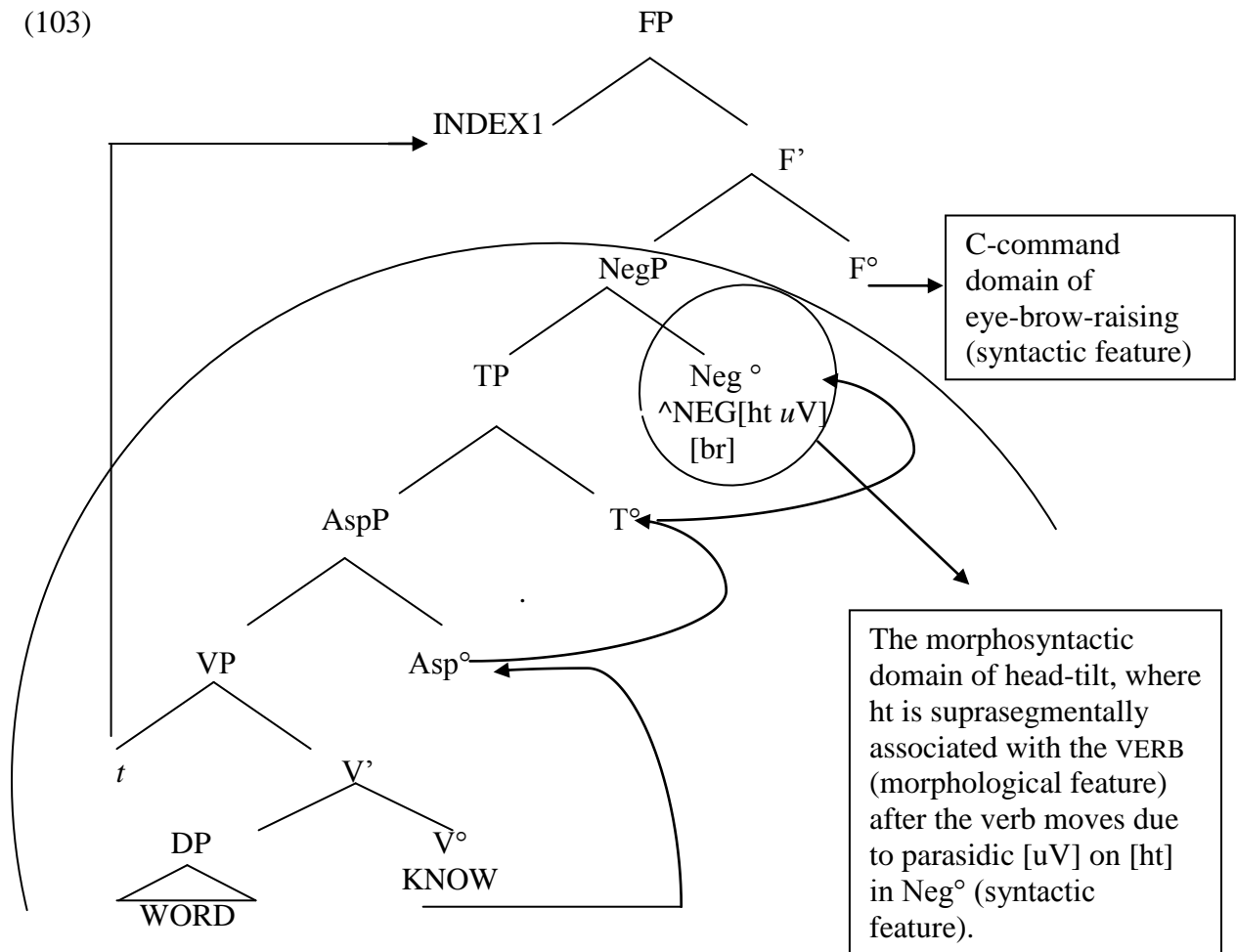
(98)



Head-tilt is associated with the VERB[^]NEG complex in (102). It is a local nonmanual marker; however, eye-brow-raising spreads over the internal argument as well as the VERB[^]NEG complex, i.e. a spreading nonmanual marker. In order to capture the facts that head-tilt is associated only with the VERB[^]NEG complex but eye-brow-raising is a spreading nonmanual organizer, we follow up on the proposals in Pfau and Quer (2002, 2007) and propose that head-tilt is a morpho-syntactic marker and eye-brow-raising is a syntactic marker in TĪD.

We propose that NegP in TĪD clause structure in verbal clauses has a manual [^]NEG marker in its head position. This manual Neg^o head has a lexically defined nonmanual marker, head-tilt. In addition to hosting the manual [^]NEG marker which is lexically defined by a head-tilt, the Neg^o in TĪD hosts a distinct nonmanual marker, i.e. eye-brow-raising. Based on the distribution of these markers we also propose that head-tilt [ht] is a morpho-syntactic marker while brow-raising [br] is a purely syntactic marker and the latter marker spreads over constituents in the -command domain of the Neg^o (103):

(103)



The negative clitic \wedge NEG and the free marker NEG are lexically defined with a head-tilt. Irrespective of the nature of the predicate, whether it is verbal or nominal, we observe that head-tilt is expressed over the manual negative marker. We propose that the reason why head-tilt is not only \wedge NEG but it spreads over the VERB when the predicate is a verb in a negative sentence can be head movement of the verb to Neg° head in syntax.

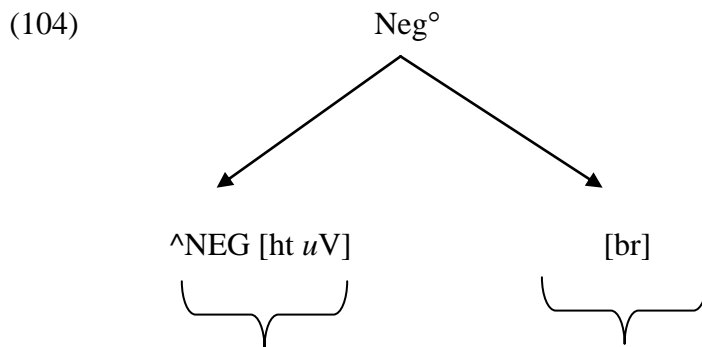
The mechanism of this movement is proposed as deriving from the [uV] in the Neg° head (syntactic feature), which we propose to be parasitic on the feature [ht]. The clitic cannot stand on its own after the verb moves to Neg° but needs to be

associated with it (morphological feature). Remember that we argued \wedge NEG is lexically defined with a head-tilt. The complex VERB \wedge NEG is then marked with a head-tilt. If there were no verb movement in syntax, we would expect head-tilt to spread over only the \wedge NEG. Then the morphological requirement of head-tilt to be associated with a segment would be met. However, this is not the case. Head-tilt always spreads over VERB \wedge NEG complex. Thus, we propose that this spread implies head movement of the verb to the Neg $^{\circ}$.

We also propose that the Neg $^{\circ}$ includes a separate nonmanual marker, eye-brow-raising, which has a purely syntactic function. Eye-brow-raising tends to spread over the internal argument but not on the subject in negative transitive sentences. Depending on this evidence, i.e. spreading over constituents in the c-command domain of the Neg $^{\circ}$, we propose that this marker is a syntactic marker and implies syntactic organization.

Why the subject INDEX1 in (102) is not under the spread domain of brow-raising is made clear in the tree representation in (103). Because of independent reasons deriving from a higher functional head in T \bar{I} D clause structure, the subject moves to the specifier position of a higher functional head and is no longer available for the spreading of eye-brow-raising in PF. The specific proposal for subject movement will be discussed in Chapter 5 where we go into details of the interaction of IP and CP domains in T \bar{I} D.

We can summarize the nature of Neg° in T1D as in (104):



The morpho-syntactic component of Neg° , which is responsible for verb movement due to [uV] parasitic on [ht] and also the association of [ht] with the verb after verb movement applies.

The syntactic component of Neg° , which is responsible for marking constituents under the c-command domain of Neg° .

We now turn to the discussion of the interaction of Negation and other functional categories for a more comprehensive clausal architecture of T1D.

CHAPTER FIVE

THE INTERACTION OF NEGATION WITH OTHER FUNCTIONAL CATEGORIES

5.1 The Interaction of Negation with Aspect and Tense

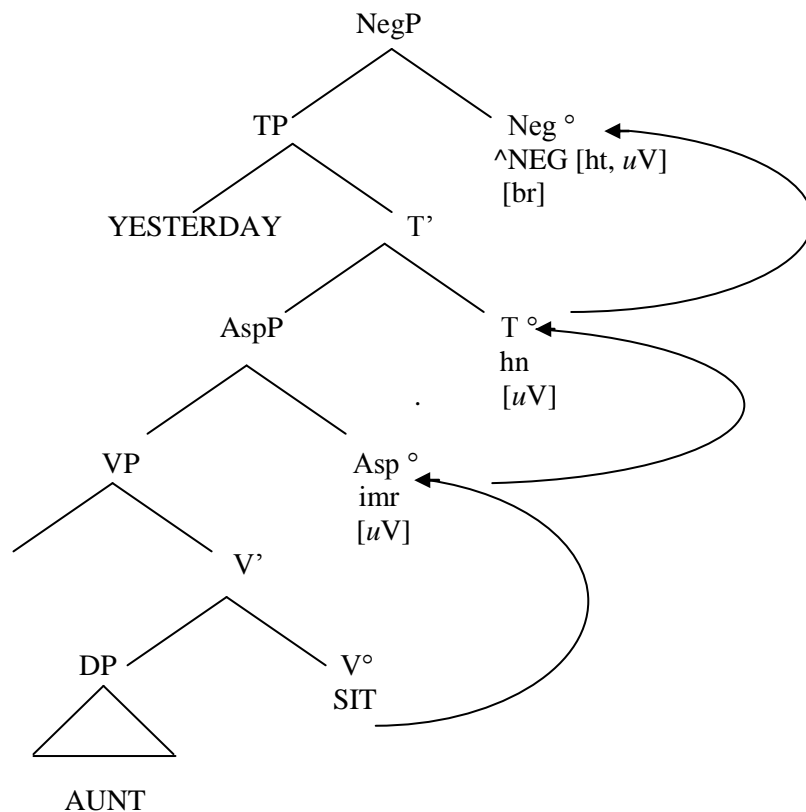
In this chapter, we consider the interaction between negation and other functional heads, namely Aspect and Tense based on their ordering. As discussed in the previous chapters, the ordering of morphemes in TID reflects the hierarchy of functional heads in the sense of Baker (1985). (105) contains a one-place predicate clause and it shows the interaction between negation and aspectual information on the verb, i.e. aspectual inflection precedes negation; therefore, Neg^o is higher than Asp^o and T^o:

(105) TEYZE DÜN EV OTUR [asp: completive]^NEG
AUNT YESTERDAY HOUSE SIT [asp: completive]^NEG
"The aunt didn't sit at home yesterday."

```
graph TD
    ht[ht] --- br[br]
    ht --- NEG1[NEG]
    br --- DÜN[DÜN]
    br --- EV[EV]
    EV --- OTUR[OTUR]
    EV --- NEG2[NEG]
    OTUR --- TEYZE[TEYZE]
    OTUR --- SIT[SIT]
    SIT --- AUNT[AUNT]
    SIT --- YESTERDAY[YESTERDAY HOUSE]
```

Note that although past tense interpretation is identified in (105), it is not realized phonologically as the negative head-tilt has the reverse movement of the past tense related forward single head-nod. Considering the ordering between Neg^o, T^o and Asp^o we propose the following hierarchical representation in (106):

(106)



In (106), it is observed that the verb is inflected for completive aspect as the movement of the verb is accentuated and slower than the base movement of the same verb. Negative clitic follows this accentuated movement of the verb which we take as evidence indicating that NegP is higher than TP and AspP following Baker's Mirror Principle. Also note in (106) that the spread area of head-tilt is VERB [asp: completive] (+the null T⁰) and the ^NEG clitic. In the tree representation in (106), we show that there is head movement (V⁰-to-Asp⁰-to-T⁰) that goes on to move up to Neg⁰. The evidence for the relevance of verb movement up to the Neg⁰ comes from the spread area of head tilt. Head tilt always targets the [V⁰+Asp⁰+T⁰^NEG] complex. Head-tilt is affixal in nature, i.e. a featural affix in the sense of Akinlabi (1996 as cited in Pfau and Quer 2007) and as an affix it cannot see what is inside the complex [V⁰+Asp⁰+T⁰^NEG] which is modified into a single phonological unit and it seems that the complex behaves as a syntactic atomic unit in the sense of

(108)¹⁹ Neg^o > T^o > Asp^o

So far, we have identified three functional projections in the IP domain in TĪD: AspP, TP and NegP. We have depended on the co-occurrence patterns of certain manual and nonmanual markers while identifying these functional categories. The head position of AspP hosts ‘imr’ (internal movement reorganization), TP ‘hn’ (head-nod) and NegP ‘ht’ (head-tilt). In addition, we have proposed that there is verb movement to these functional heads. From a minimalist perspective, movement must have a motivation for economy considerations of derivation. In this sense, we proposed that V-movement to Asp^o, T^o, and Neg^o is obligatory to check the uninterpretable [*u*V] features in these functional heads. As Asp^o, T^o and Neg^o in TĪD have a strong uninterpretable [*u*V] feature, a verbal category must move to these functional heads and check these strong features before Spell-Out applies. If these are not deleted prior to Spell-Out, the strong uninterpretable [*u*V] features would cause the structure to crash at the end of the derivation.

In the next section, we will pursue the same line of argumentation and propose that Force^o has an uninterpretable strong [*u*V] which is parasitic on the question, i.e. [Q], feature and needs to be checked by a verbal category. However, we will also show based on spreading scope facts that in declaratives Force^o does not trigger head movement.

¹⁹As we noted in Footnote 8 and Chapter 3.3, we tentatively suggest that Tense is higher than Aspect. However, we strongly propose that Neg^o is higher than both Asp^o and Tense^o depending on both segmental and suprasegmental evidence from negation.

5.2 Head Movement to the Complementizer Domain

Rizzi's (1997) split CP hypothesis decomposes the C head into Force P(hrase), Topic P(hrase), Foc(us) P(hrase), and Fin(iteness) P(hrase). In the absence of an intervening TopP or FocP, Force^o and Fin^o are maintained to be amalgamated as a single functional head, namely C^o (Rizzi 1997)²⁰. In the previous section, we analyzed NegP as higher than TP (also see Ouhalla 1991).²¹ Based on scope facts in negative structures and polar questions, we pursue an analysis in which ForceP and FinP are always distinct projections in the left periphery of TID syntax. Our main arguments in this section are as follows:

- Force^o has an uninterpretable [*u*V] which is parasitic on the [Q] feature.
- Fin^o has an EPP feature, which attracts the grammatical subject to its specifier position.
- Being outside the c-command domain of Neg^o, namely at Spec-FinP, the grammatical subject is outside the nonmanual expression of negation, i.e. eye-brow-raising in declaratives; however, being inside the c-command domain of Force^o_{Question} it resides inside the spread area of nonmanual question expression in polar questions.

²⁰ForceP is the highest functional head in the C domain. It carries illocutionary force such as declarative, interrogative or imperative. This category in the CP is a mediator between the clause it heads and an outer selector of this clause, which can be a higher subordinating clause for embedded clauses or the immediate discourse for root clauses. FinP is the projection where information about the finiteness-nonfiniteness is encoded. Finite forms have mood distinctions, tense and subject agreement. On the other hand, non-finite forms do not have morphological present/future distinction and they can express past through a periphrastic form. The function of FinP is to match the force of finiteness of the C domain with the IP domain. Thus, according to Rizzi, the specification of force of finiteness in the C system makes FinP select an IP system with the familiar characteristics of finiteness i.e. mood distinctions, nominative case and overt tense distinctions etc. (Rizzi 1997).

²¹We also have cases of negative questions in our database. An examination of these structures would yield interesting discussions; however, we keep these questions out of the scope of this study as we think we need more observations about the interaction patterns of nonmanual markers in these structures.

5.2.1 Polar questions

In TĪD, polar questions are expressed nonmanually, i.e. raised-eye-brows and forward body lean²². (109a) and (109b) illustrate polar questions for one place predicate clauses. Sentences (109c) and (109d) illustrate polar questions for two place predicate clauses. The former two also have a modal marker:

(109)

- a. COMPUTER BREAK DOWN [asp: completive]^q
“Did the computer break down?”
- b. HEAD ACHE [asp: incompletive]^q
“Is your head aching?”
- c. SHIP GET ON WANT [asp: incompletive]^q
“Do you want to get on a ship?”
- d. INDEX2 INDEXi COURSE TAKE MUST^q
“Do you have to take this course?”

The nonmanual question expression spans over the whole clause in the examples above. Clauses in (110) show that the nonmanual expression for polar questions does not have to spread over all of the segments that are under the c-command domain of the C^o head all the time:

(110)

- a. DISPLAY ADAPTER PLUCK OFF [asp: completive]^q
“Did you pluck off the display adapter?”
- b. INDEX1 PL CAR SAFETY^BELT WEAR HAVE TO^q
“Do we have to wear the safety belt in the car?”

²² Göksel et al. (2009) observe that polar questions are expressed through head-forward and nodding. As far as our observations go, we came up with two nonmanual markers, i.e. raised-eye-brows and forward-body lean for defining the nonmanual expression of questions.

- c. INDEX2PL GREEN CAR $\frac{q}{\text{EXIST}}$
 “Do you have a green car?”

Note that the spread of the nonmanual expression of polar question is still not random. It spreads either over the closest verb only (110) or over the whole clause (109). We propose that as a nonmanual marker, the question expression needs at least one segment to be superimposed onto, which renders the spreading of the nonmanual question marking on the verb obligatory. To account for this pattern, we propose that the $[V^\circ + \text{the relevant verbal functional heads}]$ move to the C° head which has a strong uninterpretable $[uV]$ feature which accompanies the $[Q]$ feature. In this sense, once the verbal complex moves to the C° to check and delete the uninterpretable $[uV]$, the suprasegmental/affixal $[Q]$ feature can minimally be associated with it. On the other hand, when the nonmanual marking is over the whole clause the suprasegmental/affixal $[Q]$ feature targets not only the moved verbal complex but the whole clause, which is under the c-command domain of the C° ²³. Thus, the verbal complex is always under the spread of the nonmanual question expression as it always moves to the C° but the rest of the clause need not to be.

Evidence for the relevance of this comes from the intensity of the nonmanual marking which is highest on the verb. (111b) illustrates that the intensity of the

²³This does not raise any problems for our analysis as we observe with other nonmanual markers similar spreading patterns for other sign languages such as ASL (Neidle et al. 1996) i.e. the spread of the nonmanual marking of polar questions is obligatory on at least one segment (i) but optional for the rest of the clause (ii):

- (i)

$\frac{y/n}{\text{JOHN BUY HOUSE QMwg}}$
 'Is John buying a house?'

- (ii)

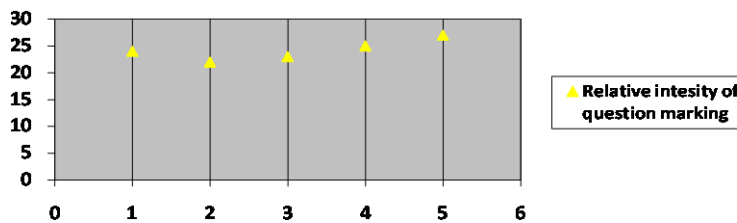
$\frac{y/n}{\text{JOHN BUY HOUSE QMwg}}$
 'Is John buying a house?'

nonmanual marking increases towards the end of the clause where the moved verbal complex resides²⁴ :

(111)

a. $\overline{\text{INDEX2 INDEXi COURSE TAKE MUST}}_q$
 “Do you have to take this course?”

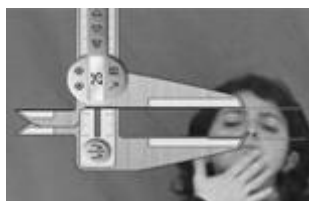
b.



For the inflectional domain, we identified Asp° , T° and Neg° as the functional heads in T°ID . We also proposed that there is head movement of V° -to- Asp° -to- T° -to- Neg° . Now for the CP domain, we propose that the verbal complex goes on to move to Fin° in both declarative sentences and polar questions and further to Force° in polar questions. Head movement operates in order to satisfy the uninterpretable $[\mu\text{V}]$ feature on the relevant left peripheral heads and the movement complex serves as a

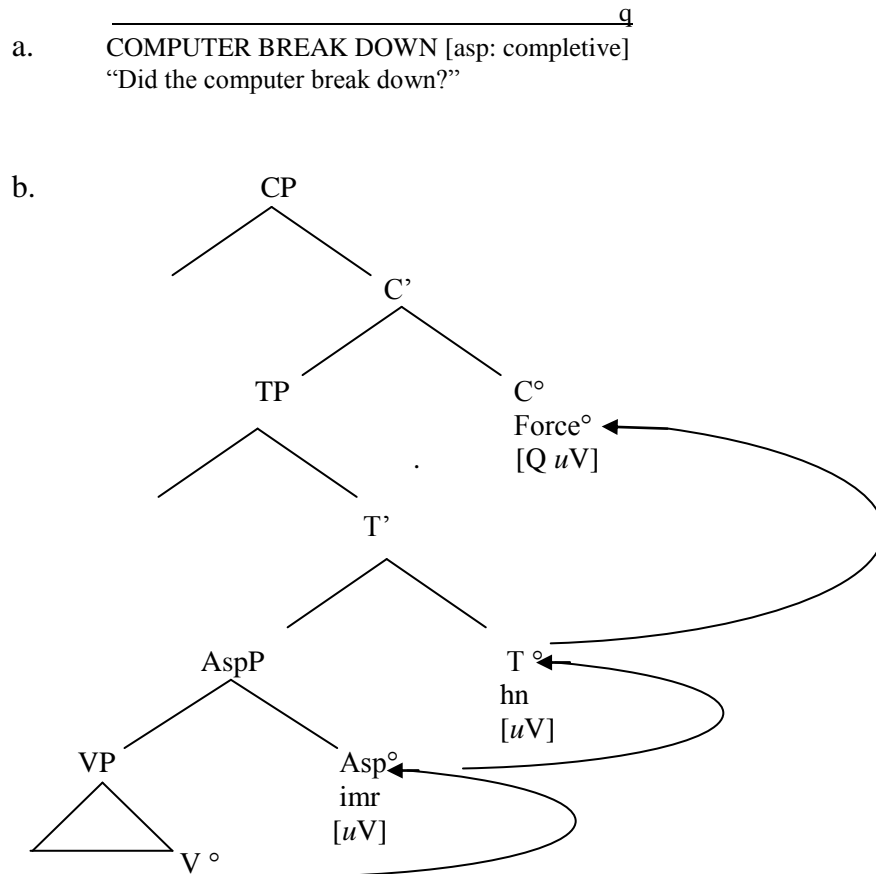
²⁴Following Weast (2008), We used the screen caliper device *ICONICO* to measure the spreading heights and concentrations of brow-raising for questions. We stabilized the sizes of the face for each of the signs after capturing a frame from them. Adjustments are made in accordance with the inclination of the face. The lower reference point for measurement is the bottom of the nose for the. The higher reference point is the halfway of the brows (i):

(i)



minimal association segment for the suprasegmental [Q] feature as represented in (112b)²⁵:

(112)



Note in (112) that as head-nod, which is associated with past, and question marking are both nonmanual, there is a restriction on the co-occurring overt expression of these two. We propose that the question expression wins over single head-nod as it is more prominent in articulation, which might be a phonological reflex of the syntactic derivation history of the clause, in that the phonological component is sensitive to

²⁵ Note that Göksel et al. (to appear) treat the nonmanual markings observed on questions in TID as clause-typers, introduced in C°. They propose that these markers indicate the onset of an utterance via intonation. The authors suggest that nonmanual markers work in a similar manner to intonation in spoken languages. In their articulated bundles of features for interrogatives, they suggest that several nonmanual markers are at work, i.e. eyebrow raise, eyes wide open, eye contact with addressee, forward body posture, mouthing, and head-forward/backward.

multiple Spell-Outs and tends to reflect hierarchically higher nonmanuals more prominent than lower ones. Note also that the [Q] feature resides in the Force^o of the CP as it is the projection which encodes the clause type (Rizzi 1997).

In the next section, we will discuss the relevance of Fin^o for negation and contrasting the spreading areas of nonmanual markers of polar questions and negation, we will propose that ForceP and FinP should always be represented as split projections of CP without an intervening TopP or FocP.

5.2.2 The EPP of Fin^o and Head Movement to the Complementizer Domain

We have already observed that the spread area of eye-brow-raising in negative clauses is restricted. As (113) and (114) show, this area excludes the grammatical subject:

(113) AUNT YESTERDAY HOUSE SIT [asp: completive]^NEG
 "The aunt didn't stay at home yesterday."

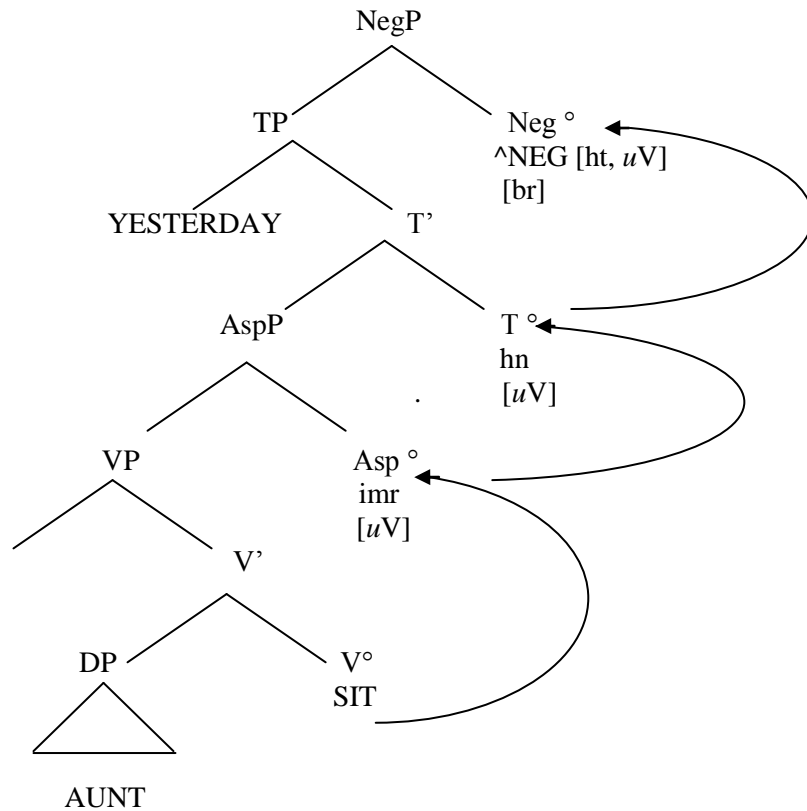
_____ ht
 _____ br

(114) INDEX1 WORD KNOW^NEG
 "I don't know the word."

_____ ht
 _____ br

Also remember that we have proposed the following tree structure in (115) for (113):

(115)



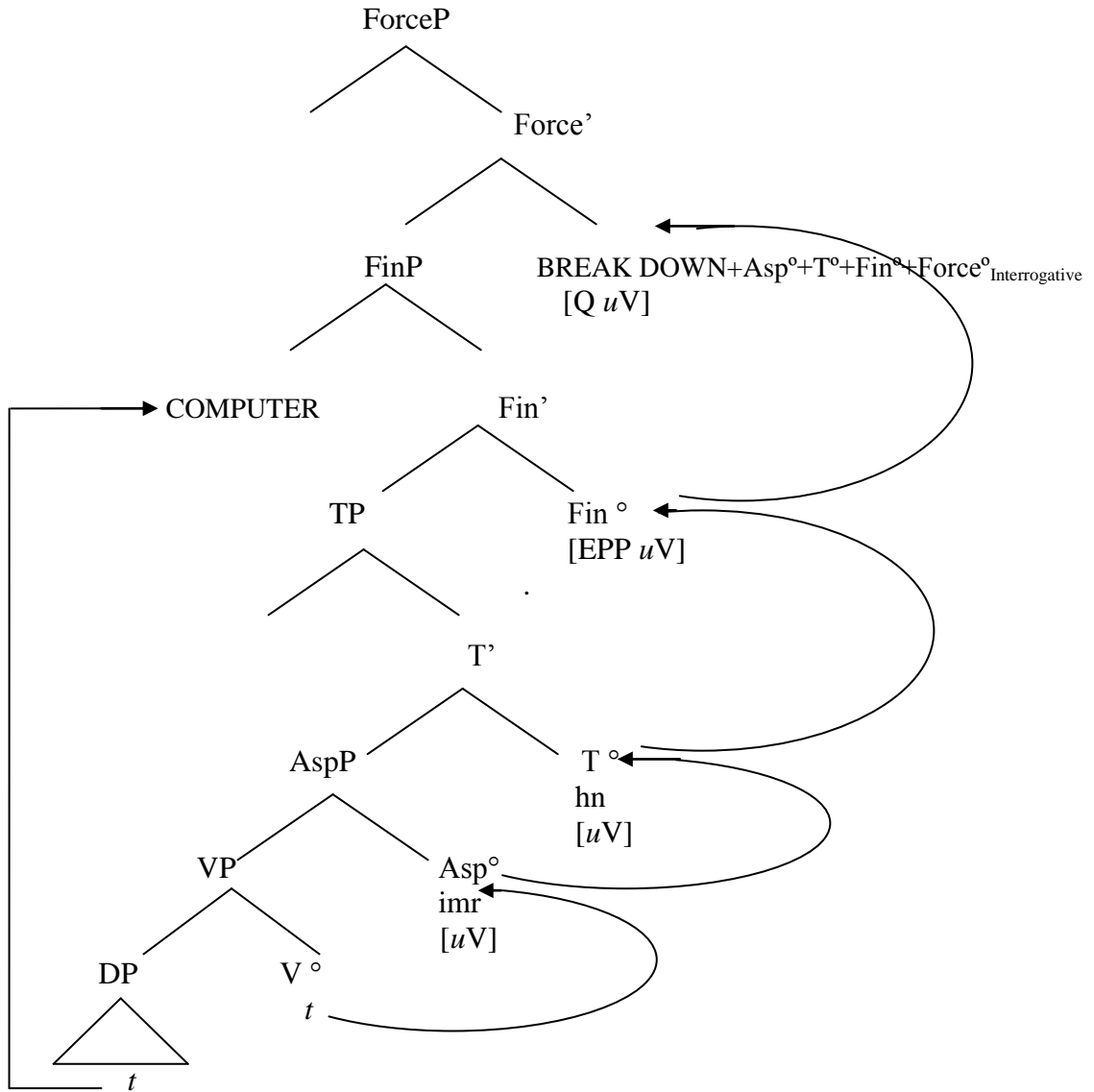
For this structure there is a problem with the position of the subject. As a spreading nonmanual marker negative eye-brow-raising spreads over the c-command domain of the syntactic head in which it resides. The c-command domain in question for (115) includes the subject which is inside VP. On the other hand, we observe that the subject is not under the spread domain of eye-brow-raising in (113) and (114). We have already proposed the relevance of head movement to the Force° of the C in section 5.2.1 above. In that section, we suggested that Force° has an uninterpretable [uV] feature and the verbal complex must move to delete that feature. We now argue that the C domain is also relevant for negative clauses. In this sense, we propose that the C has an EPP feature which needs to be checked against a DP category in its specifier position. The subject moves to SpecCP to check the EPP of C°:

Drawing on this difference we propose that the CP domain should be further divided into ForceP and FinP. In such a finer design, the grammatical subject moves to Spec-FinP in both polar questions and negative structures. The ForceP communicates with the outer domains as it encodes information about clause type and it is higher than FinP, which mediates between Force^o and inner domains. In this sense, we propose that the [Q] feature resides in Force^o head while the [EPP] feature resides in the Fin^o head. This distinction accounts for the inclusion (117) versus exclusion (118) of the subject under the spread area of nonmanual markings in polar questions and negative clauses respectively. Since the [V^o+ Asp^o+ T^o+ Fin^o] complex moves to Force^o due to its [*u*V] that is parasitic on the [Q] feature, the subject in (119b) remains inside the scope of nonmanual expression of [Q] being at Spec-FinP. On the other hand, the relevant evidence that the verbal complex does not move to Force^o in declaratives, as there is not an [*u*V] feature to attract the complex due to the lack of a [Q] feature in Force^o, is that in negative structures, the subject remains outside the syntactic scope of negation (220a), namely at Spec-FinP, which would not be the case if the whole verbal complex including Neg^o would move to the Force_{Declarative}^o head, thus c-commanding the subject.

(119)

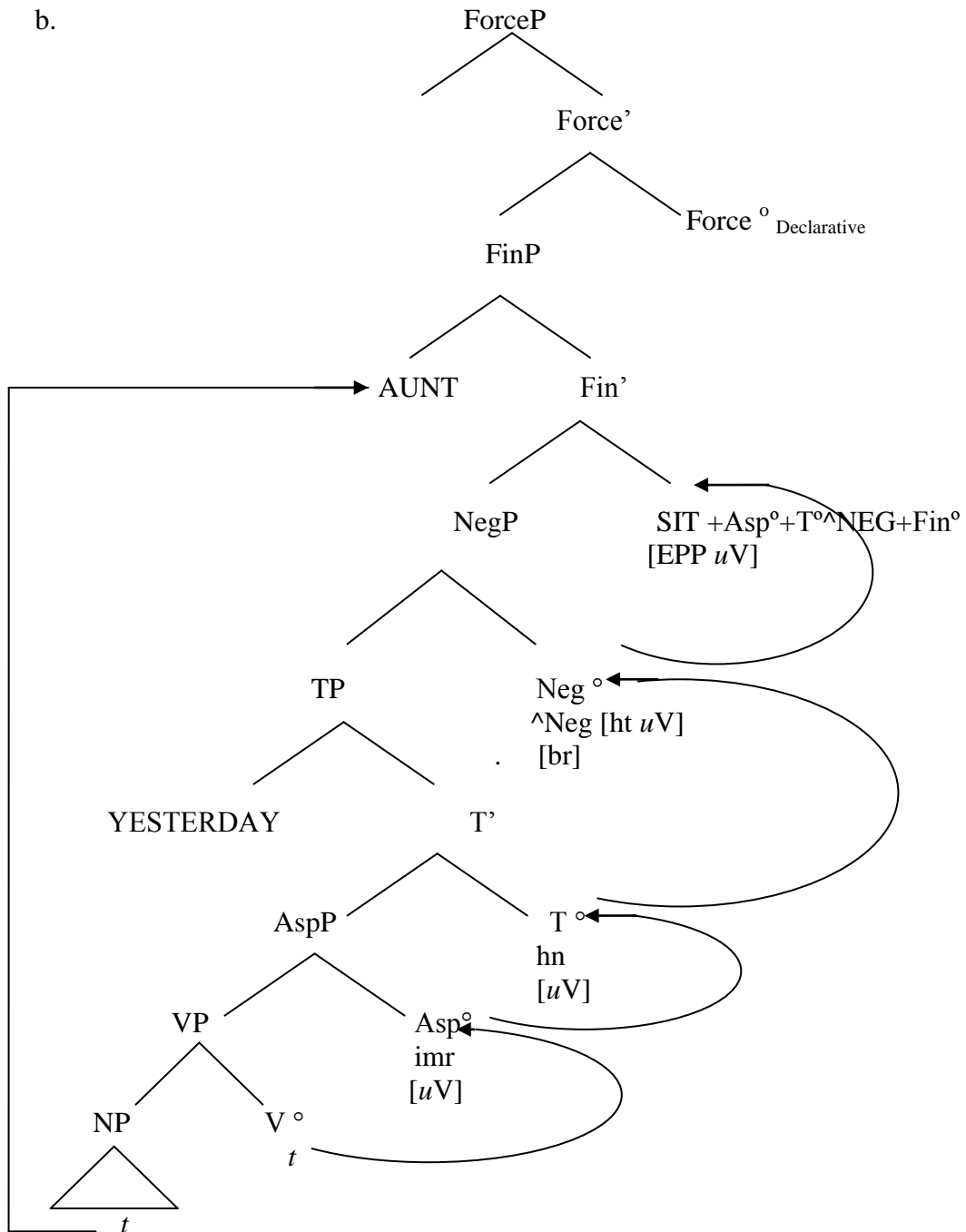
a. q
COMPUTER BREAK DOWN [asp: completive]
“Did the computer break down?”

b.



(120)

a. $\frac{\frac{\text{AUNT YESTERDAY HOUSE SIT [completive]}^{\text{ht}}}{\text{br}}}{\text{NEG}}$



In this chapter, we discussed the relevance of the C domain for both Negation and Polar questions. Based on the spreading patterns of the nonmanual markers for these

clauses, we proposed that the C domain is split in TID in that Fin° and Force° has different syntactic features. Fin° has an EPP feature which is responsible for subject movement and the movement of the subject to the specifier position of FinP explains why it is not under the spread domain of eye-brow-raising. On the other hand, Force° in questions but not in negative sentences includes a $[\mu V]$ feature which is responsible for verb-movement to this head. The moved subject's inclusion under the spread domain of the nonmanual marking for polar questions is explained through the spreading of the nonmanual marker for the polar question on the c-command domain of the head in which it resides, i.e. Force° .

CHAPTER SIX

CONCLUSION

In this study, we investigated (i) the nature of projections above the VP in ṪID clause structure, and (ii) the nature of the IP and the CP domains in declaratives and polar questions in ṪID. Based on the spreading and co-occurrence patterns of manual and nonmanual markers, we have proposed the following for ṪID syntax:

- (i) Verb is a distinct lexical category in ṪID.
- (ii) AspP, TP and NegP are distinct functional projections in the IP domain.
- (iii) Asp⁰ is [+V] (cf. Ouhalla 1991).
- (iv) Modal verbs are lexical categories and they create their own verb phrase which takes the main verb phrase as its complement. In verb movement, minimality effects are observed in the environment of modal verbs.
- (v) Head movement of verbal categories to the IP and CP domains is identified in ṪID with reference to spreading patterns of manual and nonmanual markers. Such movement is motivated on minimalist grounds through the presence of uninterpretable [*u*V] feature in the relevant functional heads.
- (vi) Brow-raising in negative sentences operates as a purely syntactic marker while head-tilt operates as a morpho-syntactic marker.
- (vii) FinP and ForceP are always distinct functional projections in the CP domain. Fin head has an [EPP] feature which attracts the grammatical

subject and Force head has a [Q] feature which has a nonmanual realization and simultaneously occurs with a [μ V] feature.

Consequently, the proposed analysis implies hierarchical organization in the IP and CP domains for the language. We believe that further focus on issues such as negative questions, the expression and the position of Topic, the position of Spec-NegP and as well as the position of the second copy in a wh-double will contribute to a more comprehensive understanding of the functional domains in T1D syntax.

REFERENCES

- Akinlabi, A. 1996. Featural affixation. *Journal of Linguistics* 32, 239-289.
- Antzakas, K. 2002. The Use of Negative Head Movements in Greek Sign Language. Manuscript, City University, London.
- Arık, E. (in progress). Constituents and Nonmanual Markers in Turkish Sign Language (TİD). Manuscript, Purdue University, West Lafayette.
- Bahan, B. 1996. Nonmanual Realization of Agreement in American Sign Language. Unpublished Doctoral Dissertation, Boston University, Boston.
- Baker, M. 1985. The mirror principle and morphosyntactic explanation. *Linguistic Inquiry* 16, 373-415.
- Belletti, A. 1990. *Generalized Verb Movement*. Torino: Rosenberg & Sellier.
- Boeckx, C. and Stjepanovic, S. 2001. Head-ing Toward PF. *Linguistic Inquiry* 32, 345-355.
- Boeckx, C. 2003. *Islands and Chains: resumption as stranding*. Amsterdam; Philadelphia: John Benjamins Pub. Co.
- Braze, D. 2004. Aspectual Inflection, Verb Raising, and Object Fronting in American Sign Language. *Lingua*, 114/1, 29-58.
- Brentari, D. 1998. *A Prosodic Model of Sign Language Phonology*. Cambridge, MA: MIT Press.
- Chomsky, N. 1957. *Syntactic Structures*. The Hague: Mouton.
- Chomsky, N. 1993. A Minimalist Program for Linguistic Theory. *The View from Building 20*, Cambridge, MA: MIT Press.
- Chomsky, N. 1995. *The Minimalist Program*. Cambridge, MA: The MIT Press.
- Chomsky, N. 1999. Derivation by phase. Cambridge, Massachusetts: MITWPL
- Chomsky, N. 2000. Minimalist inquiries: the framework. In R. Martin et al. (eds.), *Step by Step: Essays on minimalist syntax in honor of Howard Lasnik*, 89-155. MIT Press.
- Chomsky, N. 2001. Derivation by phase. In M. Kenstowicz (ed.), *Ken Hale*. Cambridge, Mass.: MIT Press, pp. 1-52.
- Chomsky, N. 2005. On Phases. Manuscript, Massachusetts Institute of Technology, Massachusetts.

- Cinque, G. 1999. *Adverbs and Functional Heads: A Cross-linguistic Perspective*. New York: Oxford University Press.
- Gökgöz, K. and A.S. Özsoy. 2008. Nonmanual marking for syntactic organization and its implications. Poster presented at First Sign Typ Conference, University of Connecticut, June 26-28.
- Gökgöz, K. and A. S. Özsoy. (in press). Syntax-phonology interface in the inflectional domain of TİD. To appear in the proceedings of the First Sign Typ Conference, University of Connecticut, June 26-28, 2008.
- Göksel, A., M. Kelepir and A. Üntak-Tarhan. 2009. Interrogatives in Turkish Sign Language: The specific functions of head tilt, head shake and head nod. Paper presented at the Workshop on Nonmanuals in Sign Languages, Goethe-University, Frankfurt am Main, Germany: 04.-05. April.
- Göksel, A., M. Kelepir and A. Üntak-Tarhan. (to appear). Decomposing the Non-Manual Tier: Cross-Modality Generalisations (To appear in Proceedings of BLS-35, Special Session on Non-speech Modalities)
- Grose, D. 2003. The perfect tenses in American Sign Language: Nonmanually Marked Compound Tenses. MA Thesis, Purdue University, West Lafayette.
- Haegeman, L. 2005. *The Syntax of Negation*. Cambridge, UK; New York: Cambridge University Press.
- Hauser, M., N. Chomsky and T. W. Fitch. 2002. The Language Faculty: What is it, who has it, and how did it evolve? *Science*, 298, 1569-1579.
- Hornstein, N. N. Jairo and K.K. Grohmann. 2005. *Understanding Minimalism*. Cambridge: Cambridge University Press.
- Kubuş, O. 2008. An Analysis of Turkish Sign Language (TİD) Phonology and Morphology. MA Thesis. Middle East Technical University, Ankara.
- Kubuş, O. and C. Rathmann. 2009. Past Morpheme Realized by a Nonmanual Marker in Turkish Sign Language (TİD). Paper Presented at Workshop on Nonmanuals in Sign Languages. Goethe-University, Frankfurt am Main, Germany: 04.-05. April.
- Lasnik, H. 1981. Restricting the theory of transformations: a case study. In: Hornstein, N. and Lightfoot, D. (Eds.), *Explanations in Linguistics*. London, Longman.
- Lasnik, H. 1999. *Minimalist Analysis*. Oxford: Blackwell.
- Liddell, S. 1978. Nonmanual Signals and Relative Clauses in American Sign Language. In P. Siple (ed.), *Understanding Language through Sign Language Research*. New York: Academic Press.

- Liddell, S. 1980. *American Sign Language Syntax*. The Hague ; New York, Mouton.
- Matushansky, O. 2006. Head-movement in linguistic theory. *Linguistic Inquiry* 37, 69-109.
- Meir, I. 2006. Question and negation in Israeli Sign Language. *Sign Language and Linguistics*, 7.2, 97-124.
- Neidle C., D. MacLaughlin, B. Bahan, and J. Kegl. 1996. Nonmanual Correlates of Syntactic Agreement in American Sign Language. American Sign Language Linguistic Project, Report 2.
- Neidle, C., J. Kegl, B. Bahan, D. Aarons, and D. MacLaughlin. 1997. Rightward Wh-Movement in American Sign Language. In D. Beerman [sic], D. LeBlanc, and H. van Riemsdijk (Eds), *Rightward Movement*. Amsterdam: John Benjamins, 247-278.
- Neidle, C., J. Kegl, D. MacLaughlin, B. Bahan, and R. Lee. 2000. *The Syntax of American Sign Language: Functional Categories Hierarchical Structure*. Cambridge, Ma.: The MIT Press.
- Nespor, M. and W. Sandler 1999. Prosody in Israeli Sign Language. *Language and Speech*. 42(2): 143-176.
- Ouhalla, J. 1991. *Functional Categories and Parametric Variation*. London: Routledge.
- Perniss, M. P., R. Pfau and M. Steinbach (eds) 2007. *Visible Variation: Comparative Studies on Sign Language Structure*. Berlin: Mouton de Gruyter.
- Pfau, R. and J. Quer. 2002. V-to-Neg raising and negative concord in three sign languages. *Rivista di Grammatica Generativa* 27, 73-86.
- Pfau, R. and J. Quer. 2007. On the syntax of negation and modals in German Sign Language (DGS) and Catalan Sign Language (LSC). In: Perniss, P., R. Pfau & M. Steinbach (eds.), *Visible variation: Cross-linguistic studies on sign language structure*. Berlin: Mouton de Gruyter, 129-161.
- Padden, C.A. 1988. *Interaction of Morphology and Syntax in American Sign Language*. New York: Garland Publishing.
- Palmer, F. R. 2001. *Mood and Modality* (2nd ed.). Cambridge: Cambridge University Press.
- Petronio, K. and D. Lillo-Martin. 1997. WH-Movement and the Position of Spec-CP: Evidence from American Sign Language. *Language* 73, 18-57.

- Pollock, J. Y. 1989. Verb movement, UG, and the structure of IP. *Linguistic Inquiry* 20, 365-424.
- Reilly, J. S., M. McIntire, and U. Bellugi. 1990. *Faces: The Relationship Between Language and Affect From Gesture to Language in Hearing and Deaf Children*. Springer-Verlag, New York.
- Rizzi, L. 1990. *Relativized Minimality*. Cambridge, Mass.: MIT Press.
- Rizzi, L. 1997. The fine structure of the left periphery. In L. Haegeman (ed.) *Elements of Grammar: Handbook of Generative Syntax*. Dordrecht: Kluwer, 281-337.
- Rizzi, L. 2001. Relativized Minimality Effects. In M. Maltin & C. Collins (eds.) *The Handbook of Contemporary Syntactic Theory*. New York. Blackwell Publishing.
- Roberts, I. 2001. Head Movement. *Handbook of Contemporary Syntactic Theory*, In M. Baltin and C. Collins (eds.), Blackwell, 113-147.
- Sandler, W. and D. Lillo-Martin. 2006. *Sign Language and Linguistic Universals*. Cambridge, UK; New York: Cambridge University Press.
- Sevinç, A. M. 2006. Grammatical Relations and Word Order in Turkish Sign Language (TİD). MA Thesis. Middle East Technical University, Ankara.
- Steedman, M. 1996. *Surface Structure and Interpretation*. MIT Press, Cambridge, MA.
- Steedman, M. 2000. *The Syntactic Process*. MIT Press, Cambridge, MA.
- Travis, L. 1984. Parameters and Effects of Word Order Variation. Doctoral Dissertation, MIT.
- Weast, T. 2008. Questions in American Sign Language: A Quantitative Analysis of Raised and Lowered Eyebrows. Doctoral Dissertation, University of Texas at Arlington.
- Wilbur, R.B. 1991. Intonation and focus in American Sign Language. In Y. No and M. Libucha (Eds.), ESCOL-90: Proceedings of the Seventh Eastern States Conference on Linguistics, pp. 320-331. Columbus: Ohio State University Press.
- Wilbur, R. B. and Patschke, C. 1999. Syntactic correlates of brow-raise in ASL. *Sign Language and Linguistics*. 2 (1), 3-41.
- Zanuttini, R. 1996. On the relevance of tense for sentential negation. In A. Belletti & L. Rizzi (eds.) *Parameters and Functional heads: essays in comparative syntax*, 181-207. New York: Oxford University Press.

- Zeshan, U. 2003. Aspects of Türk İşaret Dili (Turkish Sign Language). *Sign Language and Linguistics* 6: 43-75.
- Zeshan, U. 2004. Hand, head, and face: Negative constructions in sign languages. *Linguistic Typology* 8, 1-58.
- Zwart, C.J-W. 2001. Syntactic and phonological verb movement. *Syntax* 4.1: 34-62.