Adverbials in Turkish: The Third Parameter in Aspectual Interpretation

Dissertation submitted to the

Institute for Graduate Studies in Social Sciences

in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

in

Linguistics

by

Mine Güven

Boğaziçi University

2004

ACKNOWLEDGEMENTS

VITA

Name, Surname: Mine Güven

Date and Place of Birth: 1972, İstanbul

Degrees Awarded

- **Boğaziçi University** Institute for Graduate Studies in Social Sciences

M. A. in Linguistics (Degree of High Honors)   Oct. 1994-Feb. 1997

- **Boğaziçi University** Department of Translation and Interpreting

B. A. in Translation (Degree of Honors)   Oct. 1990- June 1994

Professional Appointments

- **Yıldız Technical University** School of Foreign Languages

Instructor of English   Oct. 1996 -

- **Boğaziçi University** Department of Translation and Interpreting

Research Assistant   Jan. 1995 – Sept. 1996

Publications

- Birkiye, A. 1994. From An Essay of Love. In S. Karantay (ed.) *The Turkish PEN Reader 1994/2:74-76.* (translation)

- Güven, M. 1997. Properties of Verbal Idioms in Turkish. Boğaziçi University. (Unpublished M.A. Thesis in Linguistics)

- Güven, M. 2003. Aspectual Interpretation at Sentence Level: A Preliminary Account through Turkish Data. In S. Özsoy & E. Taylan (eds.) *Studies in Turkish Linguistics* (Proceedings of the 10th International Conference on Turkish Linguistics, Boğaziçi University, Istanbul, Aug. 16-18, 2000).

- Güven, M. 2001. Türkçe'de *-Abll* eki ve Kiplik Belirteçleri Üzerine (On the – *Abll* affix and modal adverbs in Turkish). In, Ö. Demircan & A. Erözden (eds.) *15. Dilbilim Kurultayı: Bildiriler*, Yıldız Teknik Üniversitesi, Istanbul, May 24-25, 2001, Yıldız Teknik Üniversitesi Vakfı Yay. 79-87.

- Güven, M. 2002. Adverbs and the scope of negation in Turkish: A case of scope narrowing, (to appear in *Proceedings of the 11th International Conference on Turkish Linguistics,* Eastern Mediterranean University, Famagusta, August 7-9, 2002)

ABSTRACT

Adverbials in Turkish: The Third Parameter in Aspectual Interpretation

by

Mine Güven

The main argument of the present dissertation is that T/A adverbials in Turkish constitute the third parameter in aspectual interpretation along with the other two parameters, namely situation type and viewpoint aspect.

Concerning the expression of viewpoint aspect in Turkish, (i) the semantic distinctions denoted by Turkish T/A morphology and (ii) the basic opposition between perfective vs. imperfective and their extended interpretations are considered. As for the second parameter, the interaction of situation type with objects, Turkish perfective vs. imperfective morphology and T/A adverbials is analyzed. A time-relational analysis/categorization of T/A adverbials is proposed. The data suggest that T/A adverbials constitute one of the core elements of aspectual interpretation and that a combination of the insights of B. Comrie, C. Smith, W. Klein and M. Krifka is required to account for Turkish data adequately.

In conclusion, it is argued that aspectual oppositions derive from universal properties of time intervals, relations between intervals and mereological structure and that aspect is a linguistic instantiation of boundedness. The opposition between perfective and imperfective is argued to be an instantiation of a total vs. partial overlap relation between the reference interval and the time of the situation, in analogy to one that obtains between an adverbial interval and the time of the situation. This, in turn, suggests that from a wider perspective aspect is a linguistic reflection of the basic conceptual/perceptual contrast between figure and ground in the sense of L. Talmy and H. Demirdache & M. Uribe-Etxebarria.

v

KISA ÖZET

Türkçe'de Belirteçler: Görünüş Yorumundaki Üçüncü Parametre

Mine Güven

Bu tezin temel savı Türkçe'deki zaman ve görünüş belirteçlerinin bir tümce içindeki görünüş yorumunda etkili olan öteki iki parametre olan hal türü ve bakış açısının yanısıra üçüncü parametre olduğudur.

Bakış açısıyla ilintili olarak, Türkçe'deki zaman/görünüş biçimbirimlerinin gösterdikleri anlam özellikleri, bitmişlik ile bitmemişlik görünüşleri ve bunların ek yorumlarının ifadesi incelenmiştir. İkinci parametre olan hal türünün nesneler, görünüş biçimbirimleri ve belirteçlerle ilişkisi irdelenmiştir. Türkçe'deki zaman/görünüş belirteçleri sınıflandırılarak zaman-ilişkisel yaklaşım çerçevesinde bir çözümleme önerilmiştir. Zaman/görünüş belirteçlerinin görünüş yorumunda çekirdek öğelerden biri olduğu görülmektedir. Türkçe'deki görünüş verilerinin ancak B. Comrie, C. Smith, W. Klein ve M. Krifka'nın bağımsız olarak elde ettikleri bulguların bir araya geldiği bir çerçevede tam anlamıyla açıklanabileceği anlaşılmaktadır.

Sonuç olarak, görünüş karşıtlıklarının temelinde zaman aralıklarının evrensel özelliklerinin, aralıklar arasındaki ilişkilerin ve parça yapısının bulunduğu savunulmaktadır. Bu açıdan, görünüşün sınırlılığın dilsel bir yansıması olduğu, bitmişlik ile bitmemişlik görünüşleri arasındaki farkın da gönderge aralığı ile olay zamanı arasındaki tam/kısmi örtüşme ilişkisinin bir yansıması olduğu savunulabilir. Benzer bir ilişkinin de belirteç aralığı ile olay zamanı arasında kurulduğu göz önüne alındığında, görünüşün nesne ile çevresi arasındaki bilişsel/algısal farkın dilsel bir yansıması olduğu söylenilebilir.

ADVERBIALS IN TURKISH: THE THIRD PARAMETER IN ASPECTUAL
INTERPRETATION

LIST OF TABLES

ABBREVIATIONS

TU	Time of the Utterance	A	Adverbial interval
TS	Time of the Situation	LB	Left Boundary
R	Reference time	RB	Right Boundary
PO	Point of Orientation	SQA	Scalar Quantity Adverbial
TT	Topic Time	VQA	Vector Quantity Adverbial
VPT	Viewpoint Aspect	ST	Situation Type

T/A	Tense/Aspect, temporal/aspectual	TAM	Tense/Aspect/Mood
PRF	Perfective	IMPRF	Imperfective
PERF	Perfect	PROG	Progressive
HAB	Habitual	AOR	Aorist

EPIST	Epistemic modality	DEON	Deontic modality
HRSY	Hearsay, reportative	INFR	Inferential
EVID	Evidential	OPT	Optative
ABIL	Abilitative, permission	NECESS	Necessitative
IMP	Imperative	COND	Conditional

q. part.	Question particle	PL	Plural
ACC	Accusative Case $-(y)I$	1sg	First person singular
DAT	Dative Case $-(y)A$	2sg	Second person singular
LOC	Locative Case $-(n)DA$	3sg	Third person singular
ABL	Ablative Case $-(n)DAn$ (Partitive)	1pl	First person plural
NOM	Nominative Case $-\varnothing$	2pl	Second person plural
GEN	Genitive Case $-(n)In$	3pl	Plural person plural
POSS	Possessive		

CHAPTER ONE

INTRODUCTION

The main thesis of the present dissertation is that temporal/aspectual (henceforth T/A) adverbials in Turkish constitute the third parameter in aspectual interpretation along with the other two parameters, namely situation type and viewpoint aspect (cf. Smith (1997)).

The notion of aspect, "the semantic domain of the temporal structure of situations and their presentation" (cf. Smith (1997:1), has evolved greatly throughout its long tradition since Aristotle (cf. Binnick (1991)). The initial focus on the inherent lexical features of the verb alone as representing the properties of situations has evolved to include the arguments of the verb (cf. Binnick (1991), Smith (1997) among others). Further research has shown that various grammatical means such as verbal morphology and/or periphrasis collaborate with adverbials in the overall aspectual interpretation of the sentence (cf. Binnick (1991), Smith (1997) among others).

For Smith (1997), viewpoint aspect corresponds to grammatical aspect expressed through morphological means, while situation type refers to lexical aspect defined over the verb constellation, which includes the verb and its arguments. As for adverbials, Smith (1997) proposes the Principle of External Override to account for their contribution to aspectual interpretation. Note that we use the term "parameter" for viewpoints and situation types, which Smith (1997: xiv) considers to be the two components of the parameterized sub-system of aspect, although viewpoint categories are noted to have a parameterized structure and situation types are characterized by a prototypical organization (ibid: 2).

In this study, it will be argued that aspect is a cover term for the universal semantic category which is compositionally defined by means of three parameters, namely viewpoint aspect, situation type and T/A adverbials. Languages vary with respect to the relative "weight" of each parameter in the overall aspectual interpretation. Metaphorically speaking, aspect is like a cake compositionally formed by eggs, sugar and flour. Slightly though the amount of each ingredient might vary in individual cases, thus resulting in a different taste, e.g. a sweeter cake with more sugar or a fluffier one with more eggs, the overall output will still be recognized as a "prototypical" cake as long as all three ingredients are there.

The Turkish data to be analyzed consist of non-clausal T/A adverbials co-occurring with simple/complex morphological T/A forms and periphrases in simplex declarative affirmative sentences. The analysis will be conducted within the framework of three major approaches, namely that of Smith (1997), Klein (1992, 1995, 2000), Klein et al. (2000) and Krifka (1989). Smith (1997) provides the conceptual framework on which the two other approaches are based. The time-relational approach by Klein (1992, 1995, 2000) and Klein et al. (2000) focuses on how aspectual information is represented on the temporal axis, while Krifka's (1989) mereological approach is a formal account of the similarity among events, objects and times. In effect, this dissertation is an attempt to bring together the insights of Comrie (1976), Smith (1997), Klein (1992, 1995, 2000), Klein et al. (2000) and Krifka (1989) in providing an adequate account of Turkish facts.

The main purpose of the study is two-sided: (i) one that goes from theory to Turkish data and (ii) another that goes from Turkish data to theory. The empirical aim is to investigate the linguistic means used in Turkish to express universal aspectual distinctions with special focus on the role of T/A adverbials in aspectual interpretation. The theoretical aim is to investigate whether Turkish differs in any

way from what is predicted by the theory and, if so, what Turkish data suggest for the theory in general.

The research questions in (1) and (2) reflect both the empirical and theoretical concerns respectively:

(1)   How is aspect expressed in Turkish in terms of the three parameters, namely (i) viewpoint, (ii) situation type and (iii) adverbials?

(i)   How is viewpoint aspect expressed by Turkish T/A morphology? What are the subcategories exhibited by Turkish forms? (cf. Chapter 3, 4)

(ii)   How is situation type expressed in Turkish? What temporal/aspectual features interact in the expression of STs? Can the interplay of viewpoints, situation types and adverbials be accounted for in terms of these T/A features? (cf. Chapter 5)

(iii)   What is the contribution of T/A adverbials in aspectual interpretation? Can Turkish T/A adverbials be accounted for and categorized on the basis of time relations? (cf. Chapter 6)

(2)   Is there a cognitive principle that characterizes aspect? If so, what is the prototypical property of aspect?

Our empirical concern is with the linguistic realization of the three parameters of aspect in Turkish. The expression of viewpoint and situation type has already been considered by Johanson (1971, 1994) and Erguvanlı-Taylan (2001) in considerable detail. The analysis of Turkish data in the present study will not only serve to bring up a number of unexplored issues such as the subcategories of the imperfective, the extended interpretations of viewpoints, the grammatical and lexical expression of change of state, e.g. in periphrastic forms and adverbials, etc. but also test the time-relational and mereological approaches with respect to their adequacy in accounting for Turkish facts.

However, our major contribution will be on the nature and role of Turkish T/A adverbials in aspectual interpretation, as they per se have not been under scrutiny except in studies such as Tremblay & Yükseker (2000) and Erguvanlı (1984), Erguvanlı-Taylan (2001). The role of T/A adverbials in aspectual interpretation seems to follow from the fact that they are time intervals themselves, capable of establishing time relations like any other time interval. Specifically, it will be illustrated that adverbial intervals overlap with the time of the situation, exhibiting a number of set-theoretical relations, e.g. inclusion and proper inclusion. This overlap relation, which involves the internal temporal constituency of the situation, will be formalized under a theoretical construct called Frame (cf. Chapter 6).

Our theoretical concern is with the prototypical property of aspect, which is argued to be a cognitive principle called *boundedness*. It will be argued that aspectual oppositions derive from (i) properties of intervals, (ii) overlap vs. order relations between intervals, and (iii) quantificational reference to objects and events. In fact, unrelated though they seem, the mereological contrast between the mass vs. count objects and the visual contrast between figure vs. ground (cf. Wallace (1982), Talmy (2000a, b), and Demirdache & Uribe-Etxebarria (2000, 2001)) seem to follow from boundedness.

As a consequence, it will be argued that aspect is a linguistic instantiation of boundedness, expressed by grammatical and lexical means. Grammatical expression of boundedness includes viewpoints, special constructions and periphrastic forms. Lexical means of expression include situation types and T/A adverbials. Situation types are distinct from T/A adverbials in that they are compositionally expressed by covert categories (cf. Smith 1997:5) at the verb constellation level, which includes the verb and its arguments.

In particular, boundedness expressed by viewpoints will be defined in terms of a total (perfective) vs. partial (imperfective) reference to internal temporal constituency of a situation. The "bounded" perfective imposes an implicit bound on situations and is characterized by total reference to internal temporal constituency. On the other hand, the "unbounded" imperfective is characterized by partial reference to internal temporal constituency. Boundedness expressed by situation type involves an intrinsic bound as the defining property of a situation. While the "bounded" achievements and accomplishments are characterized by an intrinsic bound, the "unbounded" states and activities are distinguished by the lack thereof.

With respect to boundedness expressed by T/A adverbials, it will be illustrated that T/A adverbials involve independent temporal bounds which are distinct from the implicit bound in the perfective or the intrinsic bound in an achievement or an accomplishment. For example, in Russian it is possible to use the "unbounded" imperfective even when adverbials express distinct independent boundaries (cf. Klein (1995:677)). In addition, it will be observed that the independent temporal bounds found in T/A adverbials seem to differ with respect to (i) their interaction with viewpoints, situation types and special constructions and (ii) whether they are made linguistically explicit or left implicit.

In short, aspectual interpretation at sentence level will be illustrated to be a truly compositional expression of boundedness based on the semantic information supplied by the three independent parameters.

The organization of the chapters is as follows. In the second chapter, the theoretical assumptions of the study will be made explicit through a review of research on aspect. In the third chapter, the time-relational approach will be tested as to whether or not it can adequately represent the semantic distinctions denoted by simple and complex Turkish T/A morphology and periphrastic expressions. In the

fourth chapter, the expression of the perfective and the imperfective, and their extended interpretations, namely perfect and prospective, will be considered with respect to Turkish. Note that the latter two chapters deal with the first parameter, i.e. viewpoint aspect, and the way it is expressed in Turkish. In the fifth chapter, we proceed with the second parameter, i.e. situation type, and analyze its interaction with Turkish T/A morphology and adverbials, with special focus on the notions of completion and change of state. In the sixth chapter, a time-relational analysis of T/A adverbials is proposed. This proposal is an attempt to account for the Turkish facts, making use of interval properties and overlap relations, on which the time-relational approach is based. Subsequently, it will be argued that Turkish T/A adverbials constitute the third parameter, based on the observation that Turkish is a language where adverbials have as much weight as viewpoint aspect and situation type do in aspectual interpretation. The concluding chapter seven will focus on the theoretical implications of the foregoing analysis.

CHAPTER TWO

THEORETICAL FRAMEWORK

2.0. Introduction

The universal linguistic category of aspect is "the semantic domain of the temporal structure of situations and their presentation" (cf. Smith (1997:1) and is expressed both grammatically (through the use of inflectional morphemes) and lexically (in the verbal semantics and/or adverbs). Accordingly, two different but interrelated types of aspect have been distinguished (cf. Comrie (1976), Bache (1982), Dahl (1981, 1985), Binnick (1991), Smith (1983, 1986, 1997, 1999), Cinque (1999) among others), despite the lack of a general agreement on terminology. The first type, i.e. grammatical aspect, refers to the way the speaker presents the event (e.g. as on-going, completed or habitual), using the grammatical means provided in the language, whereas the second type, i.e. Aktionsart or lexical aspect, refers to the internal structure of the event in terms of its initial and/or final endpoints or internal stages, if any, i.e. how a situation is expressed by the verb and its arguments.

Sections 2.1., 2.2. and 2.3. focus on viewpoint aspect, situation type and T/A adverbials respectively, based on former studies such as those of Comrie (1976), Smith (1983, 1986, 1997, 1999), Dahl (1985), Bybee (1985), and Dik (1989) among others. In section 2.4. the approach adopted in the present study is presented, which brings together the common insights of Comrie (1976), Smith (1997), Klein (1992, 1995, 2000), Klein et al. (2000) and Krifka (1989).

2.1. Viewpoint Aspect

In his classical study, Comrie (1976:2-3) defines grammatical aspect as "different ways of viewing the internal temporal constituency of a situation," in contrast to tense, a deictic category, which relates the time of the situation to the

speech time. Therefore, aspect can be considered as situation-internal/non-deictic-relational time, while tense is situation-external/deictic-relational.

Cross-linguistically, the main opposition in grammatical aspect seems to be that between the perfective (cf. § 2.1.1) and the imperfective (cf. § 2.1.2) (cf. Comrie (1976), Foley & Van Valin (1984), Bybee (1985),[1] Dik (1989),[2] Bybee et al. (1994) among others). Verbal forms which present the situation as a whole with no reference to its internal temporal constituency are perfective. The imperfective, on the other hand, looks at the situation from the inside, and makes explicit reference to the internal temporal constituency of the situation, e.g. continuity, iterativity, etc. (cf. Comrie (1976:3-4), Bybee (1985)).

The visual metaphors such as "viewing/presenting a situation" used to define grammatical aspect reflect the speaker's subjectivity in the choice of viewpoint aspect (cf. Comrie (1976), Bybee (1985:142) and Smith (1983, 1986, 1997)). The same situation may be presented by the speaker either with a perfective form or with an imperfective form. For example, in French, the same reign of thirty years in (1) may be presented either perfectively as in (1a), or imperfectively as in (1b) (cf. Comrie (1976:17)). Thus, by choosing a certain viewpoint aspect, the speaker expresses his/her subjective "view" of the situation.

(1)   a. Il régn-a trente ans. (Comrie (1976:17))
        he reign-Past Definite 30 years
        'He reigned for 30 years.'

        b. Il régn-ait trente ans.
        he reign-Imperfect 30 years
        'He reigned for 30 years.'

In her influential work, Smith (1997:61) argues that viewpoint (grammatical aspect) is necessary to make visible the situation expressed in a sentence, just as the lens of a camera is necessary to make the objects visible. Visibility is essential to assertion, i.e. uncancellable conventional implicature (cf. Grice (1975)), and the way

semantic information is conveyed in a sentence (cf. § 2.4.1. below and Chapter 4). For Smith (1997), aspectual interpretation is a result of the collaboration between situation type and viewpoint, i.e. "a composite of the situation type schema and the viewpoint schema" (cf. Smith (1997:66)).

2.1.1. The Perfective

Perfective situations are those presented "as a single unanalysable whole, with beginning, middle, and end rolled into one" (cf. Comrie (1976:3)). Comrie (1976) notes that perfective does not make explicit reference to internal temporal constituency, without implying a lack of internal complexity. In other words, a perfective situation must be viewed not as a point but "a blob" which can have internal complexity (ibid: 16-24). For example, in Spanish it is possible to refer to distinct phases of a situation, while presenting the situation as a single complete whole as in (2).

(2)   Toda la tarde estuvieron entr-ando visitas. (Comrie (1976:22))
       all the afternoon were (Past Definite) enter-ing visitors
       'All the afternoon visitors kept arriving.'

Comrie (1976:16-19) points out a number of inadequate/incorrect characterizations of the perfective, such as involving punctuality, limited duration (cf. (1) above) or short duration. Duration does not seem to be critical to perfectivity as *I stood there for an hour* can be translated into Russian in two perfective verb forms, i.e. one referring to a subjectively long duration (with *prostojal*), and the other referring to a subjectively short one (with *postojal*). As for punctuality, not referring to internal complexity usually amounts to reducing the situation to a single point in time. However, this is only impressionistic because all events take up time (cf. Smith (1997:72)).

Comrie (1976:20) further stresses that perfective cannot be defined in terms of completion, as perfective does not denote a "completed" action but a "complete"

action with a beginning, middle and an end.   Klein (1995:673-680) also criticizes similar associations of the perfective with completion and having boundaries. For example, in Russian, neither a "complete" past historical fact in (3), nor a situation whose boundaries are explicitly specified adverbially in (4) can be perfectively presented (cf. Klein (1995, exx.1, 7)).

(3)   Velikan Rodosa vesil (Imperf.) sto tonn.
        'The colossus of Rhodes weighed 100 tons.'

(4)   Včera ja spal (Imperf.) do obeda.
        'Yesterday, I slept till lunchtime.'

Smith's (1997) definition of the perfective, which we adopt here, seems to avoid such problems (cf. Klein et al. (2000)). Perfective is a universal type of viewpoint which includes both initial (I) and final (F) endpoints, and thus is informationally closed. Perfective sentences present a situation, in its entirety, as schematized in (5) and illustrated by (6) below.

(5)   General schema for the perfective: I   F   (Smith (1997:66, ex.9))
                                                 //////////////

(6)   Mrs. Ramsey wrote a letter.   (Smith (1997:67, ex.10b))

At this point, it is important to distinguish between termination and completion. Termination refers to the fact that all situations must end some time, i.e. they have a terminal point (cf. Bull (1971), Krifka (1989)). Completion, on the other hand, refers to the set terminal point/natural endpoint in telic situations. Depending on the ST, the final endpoint included in the general perfective schema corresponds to (i) the terminal point, thus implying termination, or (ii) the set terminal point, thus implying completion of the situation.

Smith's (1997) prototypical perfective is not only sufficiently general to capture Comrie's (1976) findings about the perfective, but also allows for departures from the universal statement, which represent marked values.[3] For example, states,

which exclude initial/final endpoints, can be expressed perfectively in some languages, e.g. French (cf. Chapter 4).

2.1.2. The Imperfective

Imperfectivity makes explicit reference to the internal temporal constituency of a situation, which is viewed from the inside (cf. Comrie (1976:24)). The imperfective can further receive more specific interpretations such as progressive, habitual, iterative and continuous. Comrie (1976:25) classifies the imperfective into habitual and continuous aspects. The habitual denotes "a situation which is characteristic of an extended period of time" such that the situation must have become "a characteristic feature of a whole period" (Comrie (1976:28)). Iterativity/repetition refers to multiple instances of the same kind of situation. Continuous aspect is further subdivided into progressive and non-progressive. The progressive has often been defined as describing a situation in progress, as well as being the "combination of progressive meaning and non-stative meaning." (ibid:35) (also cf. Vlach (1981), Mourelatos (1981), Goldsmith & Woisetschlaeger (1982), Dowty (2002)).

Smith (1997) defines the imperfective as the viewpoint that focuses on part of a situation, as schematically represented in (7) below. Although imperfective viewpoints do not present closed situations, i.e. make no assertion as to the endpoints, inferences about beginnings and endings may be allowed, as illustrated by (8a), where we might pragmatically infer that Mary reached the school.

(7)   General imperfective temporal schema: I .. ///// .. F (Smith (1997:73, ex.23))

(8)   a. Mary was walking to school.   (Smith (1997:63, ex.1a))

       b. Tianli zhong-zhe huar.   (Smith (1997:76), ex. 32b)
       land-in plant-ZHE flower

Smith (1997) divides the imperfective into general imperfective and

progressive, which only applies to non-statives. Like in the perfective, there are departures from the unmarked prototypical imperfective. For example, the Chinese resultative imperfective *–zhe* in (8b) is a marked imperfective which has a span not included in the general schema. In (8b), the planting event may be in progress, or the flower may already have been planted (cf. § 4.3 for details).

2.1.3. The Neutral

In addition to perfective and imperfective, Smith (1997:3) distinguishes a third type of viewpoint, namely the neutral. Smith (1997:77) claims that sentences that lack a viewpoint morpheme (LVM sentences) are aspectually vague and must be analyzed as having the neutral viewpoint. The neutral viewpoint is "flexible, including the initial endpoint of a situation and at least one internal stage (where applicable)." LVM sentences may be flexible, allowing for both open imperfective and closed perfective readings. For example, in French the future form in the main clause can have an open (Jean will already be singing when Marie enters.) and a closed reading (inceptive: Jean will start singing when Marie enters.), as in (9) below.[4]

(9)   Jean chantera quand Marie entrera dans le bureau. (Smith (1997:78, ex. 35)
       Jean will sing^{fut} when Marie will enter^{fut} the office.

However, neutral viewpoint is not totally flexible, as it cannot have a span beyond the endpoints of the situation (cf. Smith (1997:80)). In this study, we do not deal with the neutral viewpoint, as it does not seem to be observed in Turkish, which morphologically marks the contrast between perfective vs. imperfective (cf. Chapter 4).

2.1.4. Extended Interpretations

Smith (1997:71) notes a number of language-particular departures from the prototypical perfective and imperfective, constituting marked values, which will be

called extended interpretations in the present study. For example, the English Perfect and the Chinese *–guo* are marked perfective viewpoints that focus not only the entire situation but also have a span beyond the situation. Likewise, the Chinese resultative imperfective *–zhe* is a marked imperfective which has a span not included in the general schema. In a similar vein, Turkish perfective and imperfective forms instantiate a number of such extended interpretations, corresponding to the perfect (cf. Chapter 4 for details).

Perfect expresses a relation between two time points, i.e. the time of the state resulting from a prior situation and the time of that prior situation, in contrast to the definition of aspect in terms of situation-internal time (cf. Comrie (1976:52)). In that respect, perfect is distinct from the perfective and imperfective as it does not provide information directly about the situation (cf. Comrie (1976), Dik (1989), Dahl (1985:133) and Smith (1997)).

We adopt Smith's (1997:106-108) view that perfect is a special construction rather than a type of viewpoint. She notes that perfect constructions convey the following aspectual information: (i) situation time precedes the reference time, (ii) the construction has a resultant stative value, (iii) a perfective viewpoint is expressed, and (iv) the subject assumes a special property due to having participated in the situation. This "participant property" constitutes a felicity condition on the perfect construction such that the subject must be pragmatically able to bear the property ascribed (cf. Smith (1997:108)).

In contrast to the dichotomy between the perfective and the imperfective and 'quantificational aspectuality' with values such as iterative, habitual and frequentative, Dik (1989) recognizes perfect, prospective, immediate prospective, ingressive, progressive, egressive, and recent perfect as 'phasal aspectuality' values which "describe what can be said at some reference point on the temporal dimension,

in relation to the occurrence of some state of affairs (SoA)" (ibid:187). Note that prospective, like the perfect, is a category under phasal aspectuality. While Smith (1997) does not deal with prospective at all, in the time-relational approach, it is a type of viewpoint. In Turkish, the future marker –(y)AcAK will be observed to express prospectivity among its other temporal and modal uses, though it will be argued that prospective, like the perfect, is not an independent viewpoint (cf. Chapter 4).

2.2. Situation Type

Lexical aspect, *Aktionsart* 'mode of action' or internal event structure (cf. Johanson (1971), Dilaçar (1974), Comrie (1976), Mourelatos (1981) among others.) refers to how a situation is expressed by the verb and its arguments, i.e. at the verb constellation level (cf. Smith (1983, 1986, 1997)).

Smith (1997) argues that individual situations can be grouped under idealized/prototypical classes of situations, i.e. situation type (henceforth ST). Five STs[5], namely state, activity, achievement, accomplishment, and semelfactive are distinguished on the basis of three binary valued temporal/aspectual features, namely dynamism, telicity and duration (cf. **Table 2.1**).[6]

SITUATION TYPES				
STATE [-dynamic]	*EVENT* [+dynamic]			
[-telic] (by default)	[-telic]		[+telic]	
[+durative] (by default)	[-durative]	[+durative]	[-durative]	[+durative]
state	semelfactive	activity	achievement	accomplishment
know the answer, be happy	tap, knock	laugh, swim	win a race, reach the top	walk to school, knit a sweater

Table 2.1: Smith's (1997) typology of situation types distinguished on the basis of three features

The following temporal schemata in (10a-e) adapted from Smith (1997:23-35 et passim) represent the interpretation of situation types as visible information

between the initial endpoint (I) and the final endpoint (F).

(10)   a. State   **(I)____(F)**   [- dyn, - tel, + dur]

        b. Activity   **I --------- F_{arb}**   [+ dyn, - tel, + dur]

        c. Achievement   **E R**   [+ dyn, + tel, - dur]

        d. Accomplishment   **I --------F_{nat} R**   [+ dyn, + tel, + dur]

        e. Semelfactive   **E**   [+ dyn, - tel, - dur]

When a state holds for an interval as in (10a), it refers to an undifferentiated period of states, which hold homogeneously over the interval. In terms of mereological structure, states are homogeneous, i.e. any subpart is representative of the whole (cf. Krifka (1989)). This has been called the subinterval property (cf. Binnick (1991), Dowty (2002)). States are by definition unbounded, excluding both endpoints, unless bounded through the use of linguistic tools like tense/aspect markers or adverbials.

The broken lines in (10b) and (10d) represent the internal stages of situations. This is because events do not have uniform mereological structure, i.e. they are heterogeneous such that a subpart does not represent the whole event (cf. Krifka (1989)). Activities in (10b) are distinguished from states in having an initial endpoint and an arbitrary final endpoint. Accomplishments in (10d) involve an initial endpoint and successive stages, and culminate at a natural final endpoint, following which a resultant state, represented by R, obtains. On the other hand, semelfactives in (10e) and achievements in (10c) are similar in that they are non-durative and do not involve successive internal stages. Semelfactive represents a single stage event symbolized by E (for event) and is different from achievement in that it does not involve a resultant stage.

Verb constellations (henceforth VC) are categorized into STs by using a number of syntactic and semantic tests, associated with the semantic properties

implicit in the T/A features. For example, the feature [+ dynamic] is linguistically realized by subject agency adverbials, imperatives, instrumentals, etc. because they all involve energy and agency. The feature [+ durative], on the other hand, is expressed through adverbials that involve a certain duration and not by adverbials or verbs that express completion (cf. Chapter 5). These T/A features, which underdetermine the basic ST prototypes with a cluster of properties, are basic and universal because they are based on human perceptual and cognitive abilities (cf. Smith (1997)).

The feature [+/- dynamic] serves to distinguish between states and the rest of the STs. States do not involve any energy or endpoints and obtain unless a change of state occurs to interrupt their undifferentiated span. On the other hand, events require energy to start and to continue and they stop when there is no more energy. Therefore, they have initial and final endpoints and successive internal stages. In short, although a state, e.g. *know*, does not exclude the possibility of change, it does not inherently involve change, whereas a non-state, e.g. *run*, by definition involves change over time (cf. Chapter 5).

With respect to the feature [+/- durative], Comrie (1976:41) notes that a durative situation "lasts for a certain period of time," whereas he defines punctuality as "the quality of a situation that does not last in time, it takes place momentarily" (ibid:43). As can be seen, durativity vs. punctuality are viewed as two opposing values of the same feature, e.g. [+/- momentaneous] in Dik (1989:94-5), [+/- durative] in Smith (1997). Semelfactives and achievements are conceptualized as instantaneous events, consisting of a single stage with no internal structure. On the other hand, states, activities and accomplishments are understood as taking up time, i.e. durative. As noted by Bull (1971), actually all situations "take up time and take place in time." However, in classifying situations into prototypical classes, what is

relevant is the conceptualized duration of a situation rather than the real time duration (cf. Smith (1997:19)).

As for the feature [+/- telic], Comrie (1976:45) notes that a telic situation "involves a process that leads up to a well-defined terminal point, beyond which the process cannot continue." Achievements and accomplishments are telic because they involve a change of state culminating in an outcome, i.e. the natural endpoint (Smith (1997)) or set terminal point (Krifka (1989)). States, activities and semelfactives do not involve such a culmination point and stop at an arbitrary time, i.e. the final endpoint (Smith (1997)) or terminal point (Krifka (1989)). Completion, delimitedness and total affectedness are all other terms for telicity (cf. Chapter 4 and 5).[7]

Finally, change of state, the transition from a source state to a target state, is a property of situations indirectly expressed through completion/telicity interacting with duration and does not seem to have any specialized linguistic correlates (cf. Smith (1997:42)). The expression of this notion in Turkish will be discussed throughout the chapters, since it seems to be a property not only of telic situation types but also of various aspectual expressions, e.g. periphrastic forms, the perfect of result, and a number of adverbials (cf. Chapter 3, 5 and 6 respectively).

2.3. Temporal/Aspectual Adverbials

An adverbial is taken as a general functional term referring to any word, phrase or clause that can modify a verb, an adjective, another adverb or a whole proposition. A number of studies have focused on the semantic, syntactic and pragmatic properties of adverbs in general, e.g. Jackendoff (1972), Heny (1973), Thomason & Stalnaker (1973), Mitchell (1976), Sanders (1978), McConnell-Ginet (1982), Larson (1985), Thompson & Longacre (1985), McCawley (1988) and Stroik (1990). A number of other studies have focused on T/A adverbials (cf. Traugott &

Waterhouse (1969), Morrissey (1973), Hoepelman & Rohrer (1981), Smith (1981), Dik et al. (1990), Michaelis (1996), Löbner (1999), Musan (2001a) and Bennett & Partee (2004)). Little research has been conducted on Turkish adverbs[8] except for Erguvanlı (1984), Tremblay & Yükseker (2000)[9] and Erguvanlı-Taylan (2001).

The present study is aimed at providing a time-relational analysis of Turkish T/A adverbials[10] and finding evidence for the main argument that T/A adverbials constitute the third parameter in aspect. It will be argued that adverbials are a full-fledged agent in aspectual interpretation rather than just a means to distinguish between telic vs. atelic situations, which has usually been the case (cf. Dahl (1981), Krifka (1989), Binnick (1991), Tenny (1994), Verkuyl (1996) among others).

In these studies, two types of 'aspectual' adverbs are distinguished, namely *for an hour* and *in an hour* adverbs. *For an hour* adverbs are acceptable with atelic verb constellations but not with telic ones, as illustrated in (11a-b). In (11a) the atelic running activity holds true throughout the specified length of time. However, in (11b) the same adverb is not acceptable with a telic accomplishment, which involves a natural endpoint after which the situation cannot hold. Therefore, it seems that *for an hour* adverbs are compatible with atelic STs.

(11)   a. The boy ran for an hour. (activity)

       b. The boy ran a mile *for an hour. (accomplishment)

As for *in an hour* adverbs, they specify a interval within which the situation is understood to hold. In (12a) the atelic activity is not acceptable with the *in an hour* adverb, unless it gets a shifted ingressive reading (cf. Chapter 5 for interpreted ST shifts). On the other hand, the adverb is acceptable with the telic accomplishment in (12b). In short, *in an hour* adverbs seem to be compatible with telic STs.

(12)   a. The boy ran *in an hour. (activity)

       b. The boy ran a mile in an hour. (accomplishment)

In this study, in addition to *for an hour* vs. *in an hour* adverbs a number of other T/A adverbs which contribute to aspectual interpretation at sentence level will be analyzed and categorized within the time-relational framework (cf. Chapter 6).

2.4. Approach Adopted

Following the seminal work on aspect in Turkish, i.e. Johanson (1971) and its recent version Johanson (1994),[11] significant contributions have been made in the field of Turkish aspect by a number of other scholars such as Dilaçar (1974), Yavaş (1980), Slobin & Aksu (1982), Aksu-Koç (1986, 1988, 1994), Kornfilt (1997),[12] Erkman-Akerson & Ozil (1998) and Erguvanlı-Taylan (1993, 1997, 2001), the work of whom we will be referring to in the following chapters. In this study, Turkish data will be analyzed within the framework formed by bringing together three major theoretical approaches, namely that of Smith (1983, 1986, 1997, 1999), Klein (1992, 1995, 2000) and Klein et al. (1994), and Krifka (1989). It is argued that a combination of the insights of these scholars that constitute the synthetic framework developed in this dissertation will best account for the Turkish data.

Firstly, Smith (1983, 1986, 1997, 1999) uses universal temporal/aspectual features based on human cognitive capabilities and general properties of temporal intervals, in addition to defining prototypical aspectual categories with unmarked and marked members. Thus, her work provides a sound cognitive foundation for cross-linguistic analysis and a possibility of accounting for parametric variation. Secondly, the time-relational approach proposed in Klein (1992, 1995, 2000) and Klein et al. (2000) provides a representationally adequate framework, adopting the basic assumptions of Smith (1997), such as visibility and the universal properties of intervals and time-relations. The mereological approach to aspect in the sense of Krifka (1989) has the advantage of bringing together the world of events with nominal reference and temporal constitution and providing a formal semantic

account with its algebraic basis (cf. Goodstein (1963) for Boolean algebra and Chierchia & McConnell-Ginet (2000) for set theory in linguistic semantics). The common property of all three approaches is that they assume the classical definitions of perfective vs. imperfective by Comrie (1976), though they propose different ways to represent the same semantic information.

Our study draws further from a number of other approaches to aspect, which, however, do not represent full-fledged theories. Foley and Van Valin (1984), Dik (1989) and Hengeveld (1989) have tried to establish principled relations between form and function with special focus on T/A categories and their layered representation. The wide-ranging data analysis of Dahl (1985) shares the notions of prototype and parameter with Smith (1997). As for Turkish, Johanson's (1971, 1994) choice of the term 'aspectotempora' for Turkish reflects the conceptual and behavioral affinity between tense and aspect. However, his elaborate data analyses are aimed at categorizing T/A morphemes rather than providing a universal theory of aspect.

2.4.1. The Time-Relational Approach

In the time-relational approach, tense and aspect are linguistic tools to express the order and overlap relations[13] among events in time[14] and points of orientation[15] (cf. Bull (1971) and Klein (1992, 1995, 2000)). Three time intervals are defined: (i) the time of the situation (henceforth TS), (ii) the time of the utterance (henceforth TU) and (iii) Topic Time (henceforth TT). Note that the latter two intervals are points/intervals of orientation. While TU is the primary (deictic) anchor for all tense systems, TT is a special theoretical construct of the time-relational approach (cf. below).

Like all time intervals on the temporal axis, these three intervals may overlap with, precede or follow one another. Consequently, tense and aspect are defined in

terms of order and overlap relations between intervals (cf. Klein (1992, 1995, 2000), Klein et al. (2000)). Tense is a relation between the time of the utterance and Topic Time, while Aspect is a relation between Topic Time and the time of the situation. Four viewpoints are defined, namely perfective, imperfective, perfect and prospective, as in (13a-d) (cf. Kerslake (1996:52, ex. 5)).

(13)   a. Perfective: TT at TS

         b. Imperfective: TT included in TS

         c. Perfect: TT after TS

         d. Prospective: TT before TS

Note that all the definitions in (13a-d) involve the Topic Time. The function of Topic Time is illustrated by (14a-c) below. Looking at the past tense form *was* in (14a), the time of the situation (TS) seems to precede the time of the utterance (TU). This idea is supported by (14c) as well, because the conjunct clearly indicates that the situation does not hold at TU. However, the felicitous conjunct of (14b) illustrates that TS does not need to precede TU. In fact, TS includes TU in (14b). Apparently, the sentence in (14a) makes an assertion about a time interval which precedes TU, but is properly included in TS, as schematized in (14a'). This time interval is called the Topic Time, "the time about which an assertion is made" (cf. Klein at al. (2000:742)).

(14)   a. The man was drunk.

         a'. ₒₒₒₒₒₒₒₒₒ[TSₒₒₒₒₒₒₒₒₒTT..........]..........TU..............

         b. The man was drunk, and he still is.

         c. The man was drunk, but not any more.

As can be seen, TT is similar to R (reference time) in Reichenbachian studies, as it is a (non-deictic) point of orientation. However, TT is distinct from R in two respects: (i) it can refer to a subinterval of the time of the situation (cf. Demirdache

& Uribe-Etxebarria (2000:182)) and (ii) it refers to "a time about which an assertion is made." The latter property of TT is based on the concept of visibility in Smith (1997:62) who states that "only what is visible is asserted," i.e. a sentence does not involve any assertion about times which it does not make visible through the use of tense/aspect (cf. § 2.1 above). For example, in (15) below, the imperfective makes only a part of the situation visible, therefore we can only make an assertion about the part that is visible to us. Thus, the acceptability of both the conjuncts in (15a-b) is explained (cf. Demirdache & Uribe-Etxebarria (2000, 2001) for a similar approach).

(15)   a. She was reading the book, but she didn't finish it.

b. She was reading the book, and she finished it yesterday.

c. ....[$_{TS}$...........TT...........]...........TU...............

The details of the time-relational approach to tense and aspect and the theoretical and empirical implications of the time-relational definitions in (13a-d) will be considered throughout the chapters (cf. Chapter 3 and 4). Looking at Turkish data, three theory-internal modifications will be proposed: (i) the definition of the perfective in terms of total overlap between TT and TS (cf. Chapter 3), (ii) the redefinition of perfect and prospective as special constructions rather than independent viewpoints (cf. Chapter 4) and (iii) the elaboration of the general imperfective schema to account for frequency, iterativity, and habituality/genericity (cf. Chapter 4).

Note that Smith's (1997) viewpoint schemata in (5) and (7) and the situation type schemata in (10a-e) above all involve the same interval properties. The temporal schema in (16) adapted from Smith (1997:13) represents the interpretation of aspectual viewpoints and situation types as visible information between the initial endpoint (I) and the final endpoint (F).

(16)   ...............I...........F...............

In this study, it will be argued that the schemata in (16) can be developed to represent any abstract temporal interval, including adverbial intervals (cf. Chapter 4-6). It will also be argued that aspectual oppositions derive from universal properties of time intervals and overlap vs. order relations between intervals. Wallace (1982) has suggested that aspectual contrasts are similar to the basic perceptual contrast between figure and ground[16] (cf. Talmy (2000a, b), and Demirdache & Uribe-Etxebarria (2000, 2001)).[17] The implications of this argument for Turkish data will be discussed in Chapter 7.

2.4.2. The Mereological Approach

Krifka's (1989) mereological approach to aspect is a formal model-theoretic approach[18] dealing with the relation between part and whole by means of the semi-lattice representation.[19] Specifically, Krifka (1989:90) formally represents the intuitive insight that atelic expressions resemble mass plurals (*some beer*) and bare plurals (*books*), whereas telic expressions are like measure constructions (*a glass of beer*) and count noun constructions (*three books*). Consequently, Krifka (1989) not only draws a parallel between nominal reference and temporal constitution but also accounts for the semantic similarity between telicity and quantization.

Krifka (1989) defines three domains of entities: objects, events and times.[20] The former entity covers nominal reference, while the latter two refer to temporal constitution. Through an operation called 'join' three relations are provided: part, proper part and overlap. Note that these set-theoretical relations hold for time intervals as well, thus the mereological approach is independently related to the time-relational approach.

The effect of nominal reference on the telic/atelic interpretation of sentences has been discussed by a number of scholars such as Mittwoch (1982), Tenny (1994, 2000) and Verkuyl (1996)[21] among others. The crucial point here is that the objects

involved in situations are related to how an event is measured out over time (cf. Tenny (1994, 2000)). For example, the NP in (17a) measures out the event, while the NP in (17b) does not delimit the event.[22] Note that both (17a-b) have the same verb marked with perfective morphology. Yet, (17a) is an accomplishment, whereas (17b) is an activity.[23] Note that every event takes place in time and must terminate at some point. However, only telic events have natural endpoints. For example, in "knitting a sweater" the set terminal point (STP) is reached when the sweater is complete. Note that STP corresponds to Smith's (1997) natural endpoint in telic events.

(17)   a. Selin bir kazak ör-dü.   (quantified object, accomplishment)
         Selin one sweater knit-PRF
         'Selin knitted a sweater.'

         b. Selin kazak/*kazak-lar ör-dü.   (unquantified object, activity)
         Selin sweater/*sweater-PL knit-PRF
         'Selin knitted sweaters.'

The difference between the two (internal argument/direct object) NPs in (17a-b) seems to lie in quantificational reference (cf. Krifka (1989:75)). The importance of quantificational reference is further exemplified by (18-20) below. The NP *bira* in (18a-b) and (20a) is a mass noun, while *kitap* in (19a-b) and (20b) is a count one. However, the (a) examples in (18-20) all have cumulative reference, in contrast to the quantized (b) examples. Cumulativity means that if you have a pile of *books*, each subpart of the pile is also *books*. However, in quantization, no subpart of *5 books* is equal to *5 books*.

(18)   a. Adam bira iç-ti.   (mass-cumulative → atelic activity)
         man beer drink-PRF-3sg
         'The man drank beer.'

         b. Adam bir şişe bira iç-ti.   (mass-quantized→ telic accomplishment)
         man a bottle beer drink-PRF-3sg
         'The man drank a bottle of beer.'

(19) a. Adam kitap oku-du. (count-cumulative→ atelic activity)
      man book read-PRF-3sg
      'The man read books./The man did book-reading.'[24]

      b. Adam üç kitap oku-du. (count-quantized (plural)→telic accomplish.)
      man three book read-PRF-3sg
      'The man read 3 books.'

(20) a. Adam bira iç-ti. (mass-cumulative→ atelic activity)
      man beer drink-PRF-3sg
      'The man drank beer.'

      b. Adam bir kitap oku-du. (count-quantized (singular)→telic accomplish.)
      man a book read-PRF-3sg
      'The man read a book.'

The objects with cumulative reference result in an atelic reading, as in (18a),
(19a) and (20a), while sentences with quantized objects get a telic interpretation, as
in (18b), (19b) and (20b). As can be seen, nominal reference and temporal
constitution as reflected in situation types are conspicuously similar, i.e. cumulativity
is comparable to atelicity and quantization is similar to telicity. In fact, the nominal
reference influences the situation type of the entire sentence. The major strength of
the mereological approach, as formally proven by Krifka (1989), is that if an event
has cumulative reference it will be atelic, and that if an event is quantized, it will be
telic.

CHAPTER THREE

A TIME-RELATIONAL ANALYSIS OF

TENSE/ASPECT MORPHOLOGY IN TURKISH

3.0. Introduction

In this chapter, simple and complex T/A morphology and periphrastic expressions will be considered from a time-relational perspective in an attempt to lay the foundation for a better understanding of the expression of viewpoint aspect in Turkish to be discussed in Chapter 4. In § 3.1. the time-relational approach proposed in Klein (1992, 1995, 2000) and Klein et al. (2000) will be elaborated on and schematized, with special focus on the implications of the tense and aspect definitions arising from order and overlap relations among the Time of the Situation (TS), the Time of the Utterance (TU), and the Topic Time (TT). In addition, a number of theory-internal modifications will be proposed. In § 3.2. Turkish T/A morphology will be matched with the time-relational schemata in attempt to find out which of those schemata will best represent Turkish T/A forms and whether any semantic distinctions expressed by T/A morphology remain unaccounted for within the time-relational framework. Periphrastic expressions will be considered in § 3.3. The final section will provide a summary of the findings.

3.1. A Time-Relational Representation of Tense and Aspect

The time-relational approach is based on order and overlap relations between time intervals. An interval may precede or follow another interval, or overlap with it. The overlap relation between two intervals may be total or partial. If two intervals totally overlap with each other, they are equal to one another. If there is partial overlap, one of the intervals is contained within the other interval (proper inclusion) or both

intervals have an intersecting subinterval (inclusion) (cf. **Table 3.1**).

Relations between intervals	
Order relations	**Overlap relations**
Precedence (anteriority)	Total overlap (equality)
........**X**........**Y**........ 'X before Y'	........**X/Y**.......... 'X totally overlaps with Y'
Subsequence (posteriority)	Partial overlap (proper inclusion) (1)
........**X**.........**Y**........ 'Y after X'	......[x....**Y**.....]...... 'Y in X'
	Partial overlap (proper inclusion) (2)
	......[y....**X**.....]...... 'X in Y'
	Partial overlap (inclusion)
	...[**X**...{**Y**___]....}.... 'X intersects with Y'

Table 3.1: Order and overlap relations between two intervals

Time-relationally, tense is defined as a relation between TT and TU. Past tense arises from an anteriority relation between TT and TU, as schematized in (1a). Future tense arises from a posteriority relation between TT and TU, as in (2a). As the order relation is transitive, future tense in (2b) is the mirror image of (1b).[1] Note that it is also possible for TT to be simultaneous with TU as in (3b), yielding 'present' tense. This is actually an overlap relation, therefore, 'present' tense seems different from the past and future tenses, which arise from an order relation. In this study, the term 'present' is used in the more general meaning of 'non-past' (cf. below).[2]

(1)   a. TT before TU   past   (anteriority)
        b. ..........TT..........TU.........

(2)   a. TT after TU   future   (posteriority)
        b. .........TU........TT.....

(3)   a. TT overlap TU   present   (simultaneity)
        b. ....TU/TT.........

Time-relationally, aspect is defined in terms of a relation between TT and TS.

Perfective and imperfective viewpoints arise from an overlap relation between TT and TS, as schematized in (4b) and (5b).[3] In (4a-b), the perfective is defined as a total overlap relation between TT and TS. This definition captures the findings of Comrie (1976) and Smith (1997) who stress that a perfective situation is presented as a complete, bounded whole, including the initial and final endpoints and with no reference to its internal temporal constituency.

(4) a. TT overlap TS   perfective   (total overlap)
     b. ....TT/TS....................

(5) a. TT contained in TS   imperfective (partial overlap)
     b. ....[$_{TS}$ ...TT..].............

This modified definition of the perfective contrasts with a number of distinct definitions proposed in Klein (1992, 1995) and Klein et al. (2000). For example, Klein (1992:537, ex. 30) defines perfective as "TT including end of TS and beginning of time after TS," while the English perfective is defined as "TT ovl TS (source state) and TT ovl posttime of TS (source state)" in Klein (1995:688). Klein et al. (2000:744) define the perfective as "TS contained, properly or improperly in TT." Note that the definitions of the perfective vary depending on the specific properties of the language concerned. This is due to an attempt to collapse situation type into viewpoint aspect. However, following Smith (1997), it will be argued that (i) situation type and viewpoint aspect are independent, and (ii) viewpoints constitute prototypes with marked and unmarked values. For these reasons, the total overlap relation between TT and TS in (4a) is argued to capture Comrie's (1976) classical definition of the perfective time-relationally.

As for the imperfective, the partial overlap relation in (5a-b) captures the presentation of a situation from the inside excluding the endpoints. TT partially overlaps with a subinterval of the situation, i.e. TT is a proper subset of TS, as

schematized in (5b). In short, the perfective and the imperfective contrast in terms of a total vs. partial overlap relation.[4]

On the other hand, the perfect and prospective schemata in (6-7) arise from an order relation between TT and TS. Perfect, as schematized in (6b), expresses TS as completed from the standpoint of TT, i.e. anterior to TT. In contrast, prospective in (7) is the mirror image of perfect because the situation is yet to occur from the standpoint of TT, i.e. posterior to TT. Note that TT in the perfect and prospective does not establish an overlap relation with TS but rather functions as a point of orientation with respect to which TS is ordered. The implications of that difference will lead to a modified definition of the perfect and prospective as well (cf. Chapter 4 for details).[5]

(6) a. TT after TS   perfect   (anteriority)
     b. ..............TS............TT..........

(7) a. TT before TS   prospective (posteriority)
     b. ..............TT..........TS.............

Let us now present the schematic representation of each tense and aspect combination arising from the order and overlap relations among TU, TT and TS. The simple and extended tense schemata in Reichenbach (1947) are provided on the right hand side of (8-19) below for comparison. In (8-10) the three perfective combinations, i.e. past, future and present respectively, are given: all three share the defining property of the perfective, i.e. a total overlap relation between TT and TS. For example, in the past perfective in (8), TT overlaps with TS and at the same time it precedes TU. Therefore, by transitivity, TS also precedes TU as in (8b). As can be expected, future perfective in (9b) is the mirror image of past perfective in (8b). In the present perfective in (10), all three intervals overlap. However, as TT totally overlaps with TS, there is no explicit reference to the internal temporal constituency of TS, hence perfective.[6] As in

(10c), it is difficult to find 'present' tense examples which do not have habitual implications.

(8) a. TT overlap TS and TT before TU past + perfective
  b. ....TT/TS.........TU............. (simple past: ......R/E.....S.....)
  c. She wrote a letter.

(9) a. TT after TU and TT overlap TS future + perfective
  b. .....TU......TS/TT...... (simple future: ....S....R/E...)
  c. She will write a letter.

(10) a. TT overlap TU and TT overlap TS present + perfective
  b. ....TU/TT/TS......... (simple present: ....S/R/E........)
  c. She works in a bank.

As for imperfective aspect, which expresses a partial overlap relation between TT and TS, the possibilities are schematized in (11-13) below.

(11) a. TT contained in TS and TT before TU past + imperfective
  b. ....[TS...TT...]........TU...... (no corresponding representation)
  c. She was writing a letter.

(12) a. TT after TU and TT contained in TS future + imperfective
  b. ....TU..........[TS....TT...]..... (no corresponding representation)
  c. She will be writing a letter.

(13) a. TT overlap TU and TT contained in TS present + imperfective
  b. ....[TS...TU/TT...]...... (no corresponding representation)
  c. She's writing a letter.

As seen in (11a-c), past imperfective aspect arises from a TT, which is contained in TS and precedes TU. Hence, TS must also precede TU, as in (11b). The future imperfective in (12b) is the mirror image of (11b). As for the present imperfective in (13b), TT and TU totally overlap with each other and TT makes reference to a subpart of TS, hence imperfective. It should be noted that there is no corresponding representation for the imperfective in Reichenbach (1947), since reference to a subinterval of TS by R is not possible. This property of the time-relational approach appears to be its major strength in accounting for the opposition between the perfective and imperfective.

In the perfect schemata, namely past, future and present perfect in (14-16) below, TT is both after and before TU and TS. As the definition of perfect does not stipulate the relation between TU and TS, a representational ambiguity arises in future perfect as in (15a-c). TS may follow TU as in (15b), it may precede TU as in (15d) or TU and TS may overlap with each other as in (15c).

(14)   a. TT after TS and TT before TU   past + perfect
        b. ........TS........TT.......TU.......   (anterior past: .....E.....R....S.....)
        c. The boy had already eaten his dinner.

(15)   a. TT after TU and TT after TS   future + perfect
        b. ....TU......TS......TT...   (anterior future: .....S.....E....R....)
        c. ....TU/TS......TT.........   (anterior future: ....S/E......R......)
        d. ....TS.....TU....TT.....   (anterior future: .....E.....S.....R....)
        e. John will have finished his manuscript by tomorrow.   (Comrie (1985))

(16)   a. TT overlap TU and TT after TS   present + perfect
        b. ....TS....TU/TT.........   (anterior present: .....E.....S/R...)
        c. The boy has already eaten his dinner.

This seems to be a case where both the time-relational and Reichenbachian systems are over-generating. Yet, these schemata might be representing different possibilities which may actually be realized in natural language, although (15c-d) are only conversationally implied in English.[7] Similarly, in the past prospective in (17b-d), the ordering relation does not seem to be restricted to a single representation. The future and present prospective[8] options are represented in (18) and (19) below. The different schematic possibilities representing the conversational implicature will be illustrated for Turkish in (43) below. Note that (16) vs. (19) and (14) vs. (18) are mirror images.

(17)   a. TT before TU and TT before TS   past + prospective
        b. .....TT.......TS......TU...   (posterior past: .....R.....E....S....)
        c. .....TT......TS/TU..........   (posterior past: ....R...S/E........)
        d. ....TT.....TU....TS.....   (posterior past: .....R....S...E....)

        e. He would work hard.

(18) a. TT after TU and TT before TS   future + prospective
      b. .....TU......TT.....TS..........   (posterior future: ...S.....R.....E....)
      c. She is going to write a letter.[9]

(19) a. TT overlap TU and TT before TS   present + prospective
      b. ....TU/TT.....TS.......   (posterior present: .....S/R...E...)
      c. She is about to cry.   (immediate prospective, Dik (1989:190))

Looking at (8-19) above, time-relational representations of tense and aspect seem quite similar to Reichenbach's (1947:297) thirteen possible tense configurations (also cf. **Table 3.2**, p. 61). In fact, the two systems might seem notational variants, were it not for the definition of Topic Time, looking at the past, future and present possibilities of the perfective in (8-11), perfect in (14-16), and prospective in (17-19). As for the imperfective aspect in the past, future and present in (11-13) respectively, there are no corresponding representations thereof in Reichenbach (1947).[10] It might be argued that since Reichenbach's (1947) is merely a tense system, aspect cannot be expected to be represented. This, however, overlooks the fact that perfective, prospective and perfect aspects are in fact expressed by the very 'tense' representations of Reichenbach (1947).[11] In fact, the time-relational T/A system is similar to Comrie's (1985) description of relative tenses, since it seems that all T/A distinctions have been reduced to a system of relative tense, where there is no direct, absolute relation with the main anchor, i.e. TU. Yet, the time-relational approach is capable of accounting for the imperfective aspect as well, thanks to the definition of TT, since TT makes reference to the internal temporal constituency of TS by overlapping with a subinterval of it.

A possible criticism of the time-relational approach is the following. Aspectual notions such as repetition/iteration, frequency and habituality are not dealt with at all in this approach. In fact, Klein et al. (2000) note that such distinctions cannot be represented on the time line. In Chapter 4, an account of such semantic distinctions

compatible with the time-relational system will be proposed.

3.2. A Time-Relational Representation of Turkish T/A Morphology

In this section our aim will be to match Turkish T/A morphology with the time-relational schemata introduced in the foregoing section. Many linguists have worked on the meaning, function and use of Turkish tense, aspect and mood (TAM) morphology, to mention but a few Swift (1963),[12] Lewis (1967), Johanson (1971, 1994),[13] Dilaçar (1974), Underhill (1976), Gencan (1979), Yavaş (1980, 1982), Aksu-Koç (1986, 1988, 1994), Banguoğlu (1990), Ergin (1993), Erguvanlı-Taylan (1997), Kornfilt (1997), Erkman-Akerson & Ozil (1998), Sezer (2001) and Van Schaaik (2001). Yavaş (1980)[14] will be taken as the basic reference for the semantic functions of TAM morphology in Turkish, as she adopts the same T/A definitions as those of the present study. An analysis of Turkish T/A morphology within the time-relational framework inevitably evokes the following questions:

(i)   What is the time schemata-morphological form relation in Turkish? What are the cases, if any, of (a) one-to-one correspondence between time schemata and morphological forms, (b) one-to-many correspondence between time schemata and morphological forms, and (c) many-to-one correspondence between time schemata and morphological forms?

(ii)   Are there any T/A and/or semantic distinctions not covered by this system?

As was mentioned before, not all of the logically possible T/A representations are realized in one natural language (cf. Klein et al. (2000), Yavaş (1980) among others)). Therefore, it is predicted that only some of the representations will be realized in Turkish. In the subsections of § 3.2 that follow, the representation of the semantics of Turkish T/A morphemes will reveal the strengths and shortcomings, if any, of the time-

relational approach. It will be argued that, given a number of theory-internal modifications, any T/A distinction that may be schematized on the temporal axis can be accounted for by the time-relational system, including those semantic distinctions not presently covered. However, non-temporal/aspectual notions like mood and modality distinctions molded into Turkish verbal morphology (cf. Yavaş (1980)) will remain unaccounted for, thus leaving much to be done for an adequate account of the entire Turkish TAM system.

3.2.1. Simple Forms

The following subsections will focus on the verbal T/A morphemes –*DI*, -*mIş*, -(y)*AcAK*, –*(I)yor*, -*mAktA*: –*Ar/Ir*, directly suffixed to verbal stems ignoring the grammatical function changing morphemes, the abilitative mood marker –*(y)AbIL* and the negative marker –*mA* which may precede these markers.[15] As Göksel (2001:153, ex. 3) notes, a matrix verb can occur with the following inflectional markers in (20), though they are subject to a number of semantic and morphological co-occurrence restrictions. Kornfilt (1997) also notes that possibilities for combining different aspectual values is morphologically restricted because there is a single slot for tense/aspect morphemes.

(20) V/-(y)a/-bil(Abil) /-**iyor**(Prog) /-(y)**di**(P)/-(y)sa(Cond)/(Agr)/-dir(Ass/Prob)
                                   /-**ir/ar**(Aor) /-(y)**miş** (Ev)
                                     /-**(y)acak**(Fut)/-(y)sa (Cond)
                                     /-malı(Nec)
                                     /-**miş**(Ev/Perf)
                                     /-sa(Cond)
                                     /-**di**(Past)

3.2.1.1. –*DI*

The typical T/A uses[16] of the –*DI* marker are: (i) perfective, as in (21), (ii) perfect, as in (22), and (iii) perfective with psychological/physical states, as in (23). In (21) there is no reference to the internal temporal constituency of the situation. In other

words, the relation between TT and TS seems to be one of total overlap, i.e. perfective. In addition, TS/TT is anterior to TU, as emphasized by the past adverbial *geçen akşam* 'the other evening,' hence the past perfective.

(21) Elif köpeğ-i-ni **geçen akşam** sahil-de gez-dir-**di.**/-miş. (past perfective)
      Elif dog-3sgPOSS-ACC past evening shore-LOC stroll-CAUS-DI/-mIş
      'Elif walked her dog on the shore the other evening.'

(22) Elif gömleğ-i-ni **çoktan** ütüle-**di** /-miş. (present perfect)
      Elif shirt-3sgPOSS-ACC already iron-DI/-mIş
      'Elif has already ironed her shirt.'

(23) Bak **şimdi** çok kız-**dı**-m./*miş-ım. (present perfective)
      look now very get angry-DI-1sg
      'I've gotten very angry now.'

In (22) the present result of a past TS is visible. In other words, TT overlaps TU and TS is understood to have already taken place, i.e. before TT. Note that *–DI* expresses both perfect and perfective, which converge on the property of temporal anteriority (cf. Yavaş (1980), Erguvanlı-Taylan (1997, 2001), Kornfilt (1997), Sezer (2001) among others). As for (23), a number of predicates indicating physical or psychological states denote present time when marked with the *–DI* (cf. Yavaş (1980:130), Sezer (2001:10)). In fact, in (23) *-DI* marks a change of state into a present state of anger (cf. Chapter 5). The form *–DI* also has the following extended use in (24), where a prospective reading is obtained in highly restricted contexts, e.g. immediate departure and arrivals.

(24) Hadi ben git-ti-m. (cf. (Erguvanlı-Taylan (1997:7))
      O.K. 1 sg. go-DI-1sg
      'I'm about to leave.'

In the past and present perfective sentences in (21) and (23) respectively, adverbials are associated with TS, which overlaps with TT. As for the perfect in (22), the adverb *çoktan* 'already' is not associated with TS, but expresses the distance of TS

from the given point of orientation (PO or TT). In sum, -*DI* expresses (i) anteriority, as in (21-22), (ii) simultaneity, as in (23), and (iii) posteriority, as in (24), with respect to TU. This, in turn, suggests that although –*DI* is the default past tense marker, as noted by Yavaş (1980), its temporal reference is flexible depending on (i) the adverb used, as in (22), (ii) the nature of the predicate involved, as in (23), and (iii) the context, as in (24). Yet, what is common in all its temporal/aspectual uses is the lack of reference to internal temporal constituency, i.e. perfective viewpoint. In that respect, as Erguvanlı-Taylan (1997) argues, -*DI* should be recognized as the general (direct evidence) perfective marker.

3.2.1.2. –*mIş*

The basic T/A functions borne by –*mIş* are: (i) perfective as in (25) and (ii) perfect as in (26). In (25), there is an anterior event whose internal temporal constituency is not relevant, i.e. past perfective, and the adverb *geçen akşam* 'the other evening' is associated with TS. In (26) the present state is the result of a previous process, i.e. perfect of result (cf. Yavaş (1980:51)), and the adverb is not associated with TS, but links it to the PO/TT, as was the case in (22).

(25) Elif köpeğ-i-ni **geçen akşam** sahil-de gez-dir-**miş**, kendi-si söyle-di.
      E.dog-3sgPOSS-ACC past evening shore-LOC stroll-CAUS-mIş, herself say-PRF
      'Elif walked her dog on the shore the other evening, she told me herself.'

(26) Elif köpeğ-i-ni **çoktan** gez-dir-miş, baksana şu çamura.
      Elif dog-3sgPOSS-ACC already stroll-CAUS-mIş, look at that mud
      'Apparently, Elif has already walked her dog, look at that mud.'

Yavaş (1980:54) notes that –*mIş* basically covers anteriority and perfectivity and that there is a complementary distribution between –*DI* and –*mIş*. She holds that while -*DI* establishes a past PO, -*mIş* denotes anteriority with respect to an already established PO. However, the real difference between –*DI* and –*mIş* seems to be modal rather than

temporal (cf. Aksu-Koç (1988), Erguvanlı-Taylan (1997), Sezer (2001) among others).
In fact, as can be seen in (21-22) above, *-mIş* is possible in the same context as *-DI*, the
only difference being that the situation is no longer evaluated as a direct, first-hand
experience. In other words, *–mIş* is distinguished from *-DI* on the basis of lack of direct
evidence. In (25), the information is reported by another person, i.e. hearsay/reportative,
while in (26) the speaker infers that Elif has walked the dog, looking at the mud on the
floor, i.e. inferential.

3.2.1.3. *–(y)AcAK*

The unmarked future marker[17] *–(y)AcAK* can express (i) future perfective as in
(27-28) and (ii) future prospective, as in (27-28) (cf. Yavaş (1980)). Note that in (27-
29), there is no reference to internal temporal constituency of TS, i.e. perfective. With
adverbs of temporal proximity such as *az sonra* 'soon' and *hemen* 'immediately,' as in
(29), the marker may marginally express (present) prospective, which is normally
expressed by the specialized periphrastic form *–mAK üzere* 'to be about to V' (cf. §
4.3.2, ex. 74). In (29), the event is posterior to TU and expected to take place in a short
while after TU, i.e. present (immediate) prospective.

(27) Nil **öğlenden sonra/yemekten sonra** yola çık-acak.(future perfective/prospective)
      Nil in the afternoon/after dinner leave-FUT-3sg
      'Nil will/is going to leave soon / in the afternoon/after dinner.'

(28) Kitap-lar **yarın beş-ten sonra** gel-ecek. (future perfective/prospective)
      book-PL tomorrow five-ABL after arrive-FUT-3sg
      'The books will/are due to arrive tomorrow after 5.'

(29) Nil **az sonra/hemen** yola çık-acak. (immediate (present) prospective)
      Nil soon/immediately leave-FUT-3sg
      'Nil is about to leave soon.'

In (27-28), future perfective and future prospective are neither lexically nor
grammatically distinguished, provided that the adverbs specify TS. Even if with

yemekten sonra 'after dinner,' which involves an explicit PO, we still can argue that there is an interval called *yemekten sonra* within which TS is located. In other words, *-(y)AcAK* does not grammatically distinguish between future perfective and future prospective (cf. Chapter 4 for details).[18] This suggests that *–(y)AcAK* is highly underspecified, leaving adverbs to provide the relevant T/A information. Recall that the temporal location of *-DI* was determined by adverbials or the context, but all events marked with *-DI* were perfectively presented. Similarly, the events marked with *–(y)AcAK* in (27-29) are perfectively presented, but are posterior to PO/TT.

3.2.1.4. *–(I)yor, -mAktA*

As noted by Erguvanlı-Taylan (2001), *–(I)yor* is the general imperfective marker (also cf. Kornfilt (1997)), which can co-occur with all STs including statives, as in (31a). In contrast, the *–mAktA* form is the formal progressive marker which is restricted to non-statives only, as in (30) (cf. Yavaş (1980), Kornfilt (1997) among others). The partial view of a situation with explicit reference to the internal temporal constituency inherent in the imperfective is observed in the progressive in (30), the present imperfective stative in (31a) and the present habitual in (31b). Note that at the present state of the theory there is no time-relational schema to represent the habitual situation in (31b) regularly repeated over an extended period of time (cf. Comrie (1976)).

(30)   Yeni proje-miz şu **gün-ler-de** hazırla-n-ıyor/hazırla-n-makta. (progressive)
       new project-3pl those day-PL-LOC prepare-PASS-IMPRF/prepare-PASS-mAktA-3sg
       'Our new project is being prepared these days.'

(31)   a. Düşün-üyor-um/??düşün-mekte-yim öyleyse var-ım. (stative)
       think-IMPRF-1sg/??think-mAktA-1sg therefore existing-1sg
       'I think therefore I am.'

       b. **Her gün** spor yap-ıyor-um/??yap-makta-yım. (habitual)
       everyday sports do-IMPRF-1sg/??do-mAktA-1sg
       'I do sports everyday.'

The multi-functionality of *–(I)yor*[19] is further illustrated by the future perfective in (32a), and the present prospective in (32b). Interestingly, *–(I)yor* in these extended uses in (32a-b) expresses <u>perfective</u> events posterior to TU. Recall that *–(y)AcAK* presents future events perfectively as well. It seems that imperfective events in the future are expressed not by simple forms but periphrastically, namely by *–(I)yor ol-AcAK* (cf. § 3.3.3 below).

(32)   a. **Ay-ın ondörd-ü-nde** Paris'e uç-uyor-um/*uç-makta-yım. (future perfective)
       month-GEN fourteenth-LOC Paris-DAT fly-IMPRF-1sg/*fly-mAktA-1sg
       'I'm flying to Paris on the fourteenth.'

       b. **Hemen** çık-ıyor-um/*çık-makta-yım, **az sonra** orada-yım.(present prospective)
       immediately leave-IMPRF-1sg/*leave-mAktA-1sg, soon there-1sg
       'I'm leaving now, I'll soon be there.'

3.2.1.5. *–Ar/Ir*

The "aorist"[20] marker *–Ar/Ir* is used to express (i) a situation as habitual, as in (33a-b), (ii) genericity, as in (34-35), and (iii) the future perfective, as in (36). The marker applies to all habitual and generic situations, regardless of whether iterativity is involved or not, e.g. (33a) vs. (33b) and (34) vs. (35).

(33)   a. Araba-nın ruhsat-ı **hep** çanta-m-da dur-ur. (habituality with no iterativity)
       car-GEN license-3sg always bag-1sg-LOC stand-AOR
       'The license of the car is always in my bag.'

       b. **Gece-ler-i** geç yat-ar-ım. (habituality with iterativity)
       night-PL-3sg late go to bed-AOR-1sg
       'I go to bed late at night.'

(34)   Kuş-lar uç-ar. (genericity with no iterativity)
       bird-PL fly-AOR
       'Birds fly.'

(35)   Ay dünya-nın etraf-ı-nda dön-er. (genericity with iterativity)
       moon earth-GEN around turn-AOR
       'The Moon revolves around the Earth.'

The truth value does not change from one time point to another in the atemporal

generic statements in (34-35).[21] Note that neither habituality nor genericity can be represented time-relationally at the present state of the theory. (cf. Chapter 4 for a proposal to account for habituality and genericity).

(36) Kadir **yakında** merkez-e geç-iyor/geç-ecek/geç-**er**.
     Kadir soon headquarter-DAT pass-IMPRF/~-FUT/~-AOR-3sg
     'Soon Kadir is being/is going to be/ will be transferred to the headquarters.'

In (36) the *–Ar/Ir* expresses a future perfective situation. Note that *–(I)yor* and *–(y)AcAK* can also be used in the same sentence for future temporal reference. This might lead us to think that the language redundantly uses three different forms for the same function. However, it seems highly unlikely for a language, which often uses a single morpheme for multiple purposes, to possess three synonymous morphemes. In fact, although these markers converge on the expression of futurity, partly due to the future adverbs, there is a modal difference between them (cf. Yavaş (1980)).[22] The functions of simple T/A morphology and their schematic representations are summarized in **Table 3.3**, p. 62.

3.2.2. Complex Forms with *–DI*

In the complex forms in the following subsections *–(I)DI* is immediately preceded by the verbal morphemes *–DI, -mIş, -(y)AcAK, –(I)yor, -mAktA,* and *–Ar/Ir* respectively. The form *–(I)DI* is considered as the combination of the so-called copula *-i-* and the temporal marker *–DI* (cf. Johanson (1994), Erguvanlı-Taylan (1997), Göksel (2001), Sezer (2001) among others).[23] Kornfilt (1997) discusses these forms under relative tenses with a past reference point. The aim of the analysis will be to investigate the additional temporal/aspectual distinctions provided as a result of the addition of this morpheme and its implications for the time-relational approach.

3.2.2.1. –DI-yDI

The –DI-yDI form expresses past perfective with an additional modal distance overtone, as in (37). In (37), TS is presented with no reference to internal temporal constituency, i.e. perfective. That means TS and TT totally overlap with each other and both are anterior to TU, i.e. past. In (37) it is understood that either the results of the past TS are no longer valid at TU or that there is some doubt as to its validity, as illustrated in the acceptability of the conjunct. In that respect, a past TS marked with –DI-yDI is no longer connected with the present time (cf. Yavaş (1980:16-7)). However, we cannot say that –DI-yDI is remote past either, looking at the felicity of demin 'a while ago' associated with TS in (37).

(37) **Demin** not-un-u kutu-ya bırak-tı-**ydı**-m/bırak-mış-tı-m, ama yok şimdi.
      a while ago note-2sg-ACC box-DAT leave-DI-DI-1sg/~-mIş-DI-1sg but not there now
      'I left your note in the box a while ago, but it is not there now.'

Two questions have been raised with respect to –DI-yDI; (i) whether it expresses past-in-the-past and/or (ii) past perfect (pluperfect) (cf. Yavaş (1980) for counter-arguments[24]). However, –DI-yDI expresses neither past-in-the-past nor pluperfect. A past-in-the-past reading is only possible if we make a distinction between "absolute tense" (where events are ordered with respect to TU) and "relative tense" (where events are ordered with respect to a PO other than TU) (cf. Kornfilt (1997:346). However, in the time-relational approach, all tenses are relative and there is no such thing as past-in-the-past tense, because tense is defined as a relation between TT (a PO) and TU.

(38) a. Ben gel-diğ-im-de Can yemeğ-i-ni *ye-di-ydi/ye-miş-ti.
      1sg come-DIK-1sg-LOC Can food-3sg-ACC eat-DI-DI
      '*Can had eaten when I arrived.' (intended reading for –DI-yDI)

      b. Can yemeğ-i-ni ben gel-diğ-im-de ye-di-ydi.
      'Can ate when/after I arrived.'

(39) **Saat üç-te** Can yemeğ-i-ni (**çoktan**) *ye-di-ydi/ye-miş-ti.
hour three-LOC Can food-3sg-ACC (already) eat-DI-yDI/eat-mIş-DI
'At three Can had already eaten.' (acceptable reading only with *–mIş-DI*)

In a past-in-the-past context such as the one in (38a), *–DI-yDI* is not acceptable because it does not establish a past PO with respect to which the eating event is in the past. Also note that when the position of the adverbial clause changes from sentence-initial as in (38a) to immediately preverbal as in (38b), the eating event is understood to occur after the arrival. The *–DI-yDI* does not express pluperfect, either. In (39) the adverb *saat üçte* 'at 3' specifies the reference time (PO), anterior to which TS has occurred. The pluperfect reading is further strengthened by the adverb *çoktan* 'already.' However, *–DI-yDI* is ungrammatical in (39) and in (38a), whereas *–mIş-DI* is not.

3.2.2.2. *-mIş-DI*

The *–mIş-DI* form expresses (i) pluperfect and (ii) past perfective with a modal distance overtone.[25] As opposed to *–DI-yDI* in (38a) above, *-mIş-DI* expresses anteriority with respect to a past reference point as in (40a-b) (cf. Yavaş (1980:11)). In (40a-b) the time of the arrival (PO) is anterior to the event of eating (TS). When the position of the adverbial clause changes from sentence-initial, as in (40a), to immediately preverbal, as in (40b), the eating event is understood to occur after the arrival, thus yielding a past perfective reading. The pluperfect reading is also possible in (40b) with emphatic stress on *–mIş*.

(40)   a. **Ben gel-diğ-im-de** Can yemeğ-i-ni (**çoktan**) ye-miş-ti. (pluperfect)
1sg come-DIK-1sg-LOC Can food-3sg-ACC (already) eat-PERF-PAST
'Can had already eaten when I arrived.'

b. Can yemeğ-i-ni **ben gel-diğ-im-de** ye-miş-ti. (past perfective/pluperfect)
'Can ate when/after I arrived./had eaten when I arrived.'

However, the grammaticality of (38b) with *–DI-yDI* and (40b) with *–mIş-DI*

shows that the two forms also converge at some point, further exemplified in (41a). In fact, in (41a) all three morphemes –*DI* and –*DI-yDI* and -*mIş-DI* express past perfective, whereas only –*mIş-DI* can express pluperfect as in (41c).

(41) a. *Çalıkuşu*'nu ilkokul-da-yken oku-**du**-m/oku-**du-ydu**-m/oku-**muş-tu**-m.
Çalıkuşu-ACC primary school-LOC-during read-DI-1sg/~-DI-yDI-1sg/~-mIş-DI-1sg
'I read *Çalıkuşu* while I was at primary school.'

b. *Çalıkuşu*'nu ilkokul-da-yken *****çoktan** oku-**du**-m/oku-**du-ydu**-m.(*pluperfect)
Çalıkuşu-ACC primary school-LOC-during *already read-DI-1sg/~-DI-yDI-1sg
'*I had already read *Çalıkuşu* while I was at primary school.' (*intended reading)

c. *Çalıkuşu*'nu ilkokul-da-yken **çoktan** oku-**muş-tu**-m.(pluperfect)
Çalıkuşu-ACC primary school-LOC-during already read-mIş-DI-1sg
'I had already read *Çalıkuşu* while I was at primary school.'

The question is why the language uses three morphemes for the same function, when it is usually the opposite, where a single morpheme is used for multiple functions. Although these three morphemes converge in one of their T/A functions, i.e. past perfective, they differ in terms of the modal distinctions they express. While –*DI* expresses direct evidence, –*DI-yDI* and –*mIş-DI* express a modal distance. The *mIş-DI* is further distinguished from –*DI-yDI* in establishing a past PO that is distinct from TS (cf. Yavaş (1980:18)) and thus expressing pluperfect.

3.2.2.3. –*(y)AcAK-DI*

The –*(y)AcAK-DI* form expresses past prospective as in (42) and (43). In (42a), –*(y)AcAK-DI* is used to narrate a past event, which is posterior to a PO, which itself is anterior to TU, as in (42b). The PO is signalled by the adverb *1990'da* 'in 1990' (cf. Yavaş (1980:21)) and the event is posterior to this PO, as schematized in (42b). (42b) is the past prospective schemata in (17b) above, except for the PO which has replaced TT (cf. Chapter 4 for details).

(42)   a. İş-e **1990'da** başla-mış-tı ve **çok geçmeden** sıkıl-acak-tı. (narrative)
       work-DAT 1990-LOC start-PERF-PAST and soon get bored-FUT-DI
       '(S)he had started work in 1990 and would soon get bored.'

   b. .....PO......TS......TU......

The sentences in (43a-c) seem to correspond to the schemata in (17b-d) respectively, given deictic adverbs which introduce a point of orientation. The deictic adverb *dün* 'yesterday' associated with TS is anterior to TU in (43a-a'), *bugün* 'today' coincides with TU, as in (43b-b'), and *yarın* 'tomorrow' is posterior to TU in (43c-c'). Note that it would be hardly possible to match (43a-c) with (17b-d) without these temporal location adverbs, as the difference is not grammaticalized. These facts suggest that we are actually dealing with conversational implicatures rather than the basic meaning of the morphemes (cf. Comrie (1985)).

(43)   a.Paket **dün** gel-ecek-ti ve **dün akşam saat sekiz-de** gel-di.
       parcel yesterday come-FUT-DI and yesterday evening at 8 come-DI
       'The parcel would arrive yesterday and it did at 8 yesterday evening.'
       a'. ....TT......TS......TU...   (17b above)

   b. Paket **bugün** gel-ecek-ti ve işte gel-di **bile**!
       parcel today come-FUT-DI and here come-DI already
       'The parcel would arrive today and here it is!'
       b'. ....TT......TS/TU.........   (17c above)

   c. Paket **yarın** gel-ecek-ti. Bak-alım gel-ecek mi zamanında?
       Parcel tomorrow come-FUT-DI see-DESID come-FUT Q.part. on time
       'The parcel was supposed to come tomorrow. We'll see if it'll arrive on time.'
       c'. ....TT.....TU....TS.....   (17d above)

Also note that (43c) is different from (42a) and (43a-b). As the event in (43c) is non-factual at TU, as opposed to the already realized events in (42a) and (43a-b), it carries a modal (uncertainty/doubt) function. The expression of uncertainty and non-factuality by *–(y)AcAK-DI* might be due to *–(y)AcAK*, which is by definition "non-factual" and uncertain, yielding a modal "it was supposed to V" meaning.

3.2.2.4. –(I)yor-DI; -mAktA-yDI

The –(I)yor-DI form basically expresses the past imperfective, as in (44). In (44), the past temporal location of TS is specified by the adverb *geçen Mart* 'last March,' and TS is understood to be in progress during that interval. Note that the progressive marker –*mAktA* is acceptable in (44) but not in (45).

(44)   **Geçen Mart** bizim proje hazırla-n-ıyor-du./hazırla-n-makta-ydı.(past imperfect.)
        past March 1pl-GEN project prepare-PASS-IMPRF-DI/~-PASS-mAktA-DI
        'Last March our project was being prepared.'

Given an adverb like *her Pazar* 'every Sunday,' –*(I)yor-DI* may also be used to express past habitual situations, as in (45). Note that past habituality in (45) cannot be represented time-relationally at the present stage of the approach, while the past imperfective in (44) can, as was schematized in (11b) above.

(45)   Can **her Pazar** maça gid-iyor-du/*git-mekte-ydi. (past habitual)
        Can every Sunday match-DAT go-IMPRF-DI/*go-mAktA-DI
        'Can was going to a game every Sunday.'

3.2.2.5. –Ar/Ir-DI

The basic T/A function of –*Ar/Ir-DI* is past habituality, as in (46). It also has non-temporal/aspectual functions such as (i) conditionality, as in (47) and (ii) volition, as in (48). At the present state of the theory, the past habitual cannot be represented on the time line, let alone the modal notions expressed in (47-48).

(46)   Can **her Pazar** maç-a gid-er-di. (past habitual)
        Can every Sunday match-DAT go-AOR-DI-3sg
        'Can would go to a game every Sunday.'

(47)   Yağmur yağ-acağ-ı-nı bil-se-ydi-m, şemsiye al-ır-dı-m. (conditional[26])
        rain (n.) rain-FUT-3sg-ACC know-COND-DI-1sg, umbrella take-AOR-DI-1sg
        'If I knew it was going to rain, I would have taken an umbrella.'

(48)   Biz çık-ıyor-uz, siz de gel-ir mi-ydi-niz? (volition)
        1pl go out-IMPRF-1pl, 2pl part. come-AOR Q. part.-DI-2pl
        'We are going out, would you like to come?'

The foregoing discussion of complex forms with –(I)DI suggests that the –(I)DI forms convey modal notions as well as past temporal reference. It has also been observed that the time-relational theory is becoming less and less efficient in accounting for Turkish facts, e.g. habituality in (47), in addition to various modal overtones.

3.2.3. Complex Forms with –mIş

The combination of –(I)mIş with the morphemes -mIş, -(y)AcAK, –(I)yor, -mAktA and –Ar/Ir respectively is considered below.[27] In (49), the inner perfect marker preserves its T/A function while the outer –mIş assumes a hearsay/reportative function. Similarly, in (50-52) below, it is observed that –(I)mIş following T/A morphemes only adds a hearsay meaning, leaving the original temporal/aspectual distinctions intact: the –(y)AcAK in (50) expresses futurity, the -(I)yor and –mAktA in (51) denote imperfectivity and the –Ar/Ir in (52) has the habitual (narrative) meaning.

(49)   Gezi-den vazgeç-miş-miş, gel-m-iyor-muş. (present perfect)
       trip-ABL give up-mIş-mIş, come-NEG-IMPRF-mIş
       'Reportedly, she has given up the idea of going on the trip and is not coming.'

(50)   Paket **yarın/bugün** gel-ecek-miş. (future perfective/prospective)
       Parcel tomorrow/today come-FUT-mIş
       'Reportedly, the parcel is supposed to arrive tomorrow/today.'

(51)   Ahmet ofis-te çalış-ıyor-muş/çalış-makta-ymış (present/past imperfective)
       Ahmet office-LOC work-IMPRF-mIŞ/work-mAktA-mIş
       'Reportedly Ahmet is/was working at the office.'

(52)   **Bir varmış bir yokmuş** orman-da kötü bir büyücü yaşa-r-mış. (habitual)
       once upon a time forest-LOC wicked a wizard live-AOR-mIş
       'Once upon a time there lived a wicked wizard in the forest.'

Recall that the difference between –DI and –mIş was shown basically to be one of direct vs. indirect evidence. As can be predicted, the modal difference between –DI and –mIş is hardly relevant for the time-relational schemata. The addition of –(I)mIş to a verb already marked with one of the T/A morphemes does not introduce an additional

PO but a modal difference: hearsay/reportative. The schematic representations of complex T/A forms in Turkish based on their major functions are provided in **Table 3.4**, p. 63.

3.3. Periphrastic Expressions

This subsection focuses on the combination of the main verbs carrying any one of the *-mIş, -(y)AcAK, -(I)yor/-mAktA* and *–Ar/Ir* forms respectively followed by the auxiliary *ol-* with its T/A markers. The examples are organized as illustrated in (53).

(53)   a. verbal stem + T/A marker   ol + T/A marker

b. verbal stem + T/A marker   ol + T/A marker + -(I)DI

c. verbal stem + T/A marker   ol + T/A marker + -(I)mIş

The auxiliary is allowed to be marked with one or two T/A markers. The outer marker on the auxiliary can only be *–DI* or *–mIş*. Three questions are raised with respect to periphrastic forms: what is the function of (i) the inner TAM morpheme, (ii) the auxiliary *ol-* and (iii) the outer TAM marker(s) on *ol-*? A number of Turkish periphrastic forms have been analyzed by Lewis (1967),[28] Kornfilt (1997),[29] van Schaaik (2001) and Göksel (2001). Their findings suggest that multiple markers on the verbal stem and the auxiliary *ol-* complicate both the grammatical expression and conceptualization of temporal/aspectual notions. As in (54a), adapted from Comrie (1985:75), "more complex tenses with a chain of reference points" can be created, though this conceptual possibility is usually not grammaticalized in languages.

(54)   a. John left for the front, by the time he should return, the fields would have been burnt to stubble.

b. ....PO/TS1(leave) ....TS2 (burn) ......PO/TS3 (return) ....TU...........

van Schaaik (2001) notes that periphrastic constructions often result from the

application of an outer operator over an inner operator. If the two operators are semantically compatible, then an acceptable construction arises. What is crucial is the demand for a combined function. Periphrastic constructions are expected to be felicitous as long as they convey meanings not expressed by the usual grammatical means. It will be argued that change of state is the semantic distinction shared by all periphrastic forms in Turkish and that the auxiliary *ol-* functions like an outer lexical "layer" of aspectual specification that incorporates the change of state meaning into the inner aspectual distinctions.

3.3.1. *–mIş ol-*

The set of periphrastic forms with V–*mIş ol*-T/A marker in (55-60) denote a realized change of state with a resultant state. The inner morpheme *–mIş* preserves its basic meaning of completion and perfectivity, while the auxiliary[30] *ol-* denotes a change of state. For example, in (55a), there is an anterior event presented perfectively, which, however, is not semantically identical with the past perfective *Paris'i gör-dü-k*. 'We saw Paris.' In fact, the structure in (55a) presents a perfective viewpoint of perfect of result, which combines a process and a change of state as schematized in (55a'). Following the change of state, a resultant state of having seen Paris is reached (cf. Göksel (2001:158), and § 5.1.2.1, § 5.1.2.2. for perfect of result).

(55)   a. Böylece (*geçen ay) Paris'i gör-müş ol-du-k.
       thus (*last month) Paris-ACC see-PERF be-DI-1pl
       'Thus, we (have) ended up seeing Paris *last month.'

       a'. ....TS/TT.............TU/PO......   (perfective of perfect of result)

       b. Böylece Paris'i gör-müş ol-du-ydu. (be-DI-DI-3sg)
       'Thus s/he ended up seeing Paris.'

       c.*Böylece Paris'i gör-müş ol-du-ymuş.[31] (be-DI-mIş-3sg)

Note that there are two reference times in (55a'): (i) TT totally overlaps with the event of seeing, i.e. perfective, and (ii) PO marks the present result of an anterior event by overlapping with TU, i.e. (present) perfect. As there are three possible intervals with which the Position adverb *geçen ay* 'last month' can be associated, namely TS, TT and PO, the adverb is infelicitous, as in (55a).

As will be clear from the examples in (55-81) in the ensuing subsections, the T/A markers on the auxiliary do not affect the overall aspectual "change of state" meaning of the periphrastic form. Instead, they serve to establish temporal location or provide modal distinctions. For example, while (55a) implies direct evidence due to the presence of *–(I)DI* on *ol-*, (55b) denotes modal distance with *–DI-yDI*. The reportative counterpart of (55a) is (56a). Similarly, (56b) expresses modal distance while (56c) expresses disbelief. In sum, the epistemic modal functions of *–(I)DI* and *–(I)mIş* in the complex forms discussed above are preserved in the periphrastic constructions as well, providing a great deal of predictability.

(56) a. Böylece Paris'i gör-müş ol-muş. (be-mIş-3sg)
      'Reportedly, thus s/he has ended up seeing Paris.'

      b. Böylece Paris'i gör-müş ol-muş-tu-k. (be-mIş-DI-1pl)
      'Thus we had ended up seeing Paris.'

      c. Böylece Paris'i gör-müş ol-muş-muş. (be-mIş-mIş-3sg)
      'Reportedly, thus s/he ended up seeing Paris.'

While (57b) expresses anterior prospective of the perfect TS, (57c) denotes disbelief or hearsay, i.e. epistemic modality. The future perfect is expressed by the *–mIş ol-AcAK* form in (57a) and (58a-b). In (58a-b), the adverb of anteriority *çoktan* 'already' is acceptable. In addition, the Position adverb *sekizde* 'at eight' specifies the future PO by which the situation will have been completed and not TS, irrespective of its

position in the sentence in (58b). This shows that TT in perfect is no more than a PO and the adverb is associated with this PO, as represented by (58c) (cf. § 4.3 for the modified definitions of perfect and prospective).

(57)   a. Böylece Paris'i gör-müş ol-acak. (be-FUT-3sg)
'Thus s/he will have seen Paris.'

b. Böylece Paris'i gör-müş ol-acak-tı. (be-FUT-DI-3sg)
'Thus s/he would end up seeing Paris.'

c. Böylece Paris'i gör-müş ol-acak-mış. (be-FUT-mIş-3sg)
'Reportedly, thus, s/he would end up seeing Paris.'

(58)   a. **Ben gel-diğ-im-de** Can yemeğ-i-ni (**çoktan**) ye-miş ol-acak
1sg come-DIK-1sg-LOC Can food-3sg-ACC (already) eat-PERF ol-FUT
'Can will have already eaten when I arrive.'

b. (**Sekizde**) Can yemeğ-i-ni (**sekizde**) (**çoktan**) ye-miş ol-acak.
'Can will have eaten by 8.'
'*Can will eat at 8.'

c. ............TU........TS....... PO(TT)..........   future perfect

The forms in (59-60) are semantically identical, but (60) is less felicitous. Most of the following periphrastic forms involving –*mAktA* will be observed to be awkward, if not ungrammatical. Note that it is difficult to find acceptable –*mAktA* examples, as its function is restricted to only progressive aspect, as opposed to the general imperfective function of –*(I)yor*. In fact, infelicity is expected in (60a), where the perfect marker occurs with the progressive marker, as there can be no progression in a resultant state (cf. § 5.1.2.2.). As for (59a), the final endpoint of a completed TS coincides with TU, as further illustrated by (59a'). While (59b) expresses past imperfective of the perfect TS, (59c) is the reportative of (59b).

(59)   a. Böylece Paris'i gör-müş ol-uyor-uz. (be-IMPRF-1pl)
'Thus we are ending up having seeing Paris.'

a'. Böylece bir program-ın daha son-u-na gel-miş ol-uyor-uz/bulun-uyor-uz.
thus one programme-GEN more end-3sg-DAT come-PERF be/exist-IMPRF-1pl
'Thus we are at the point of having finished another programme.'

b. Böylece Paris'i gör-müş ol-uyor-du. (be-IMPRF-DI-3sg)
'Thus s/he was ending up seeing Paris.'

c. Böylece Paris'i gör-müş ol-uyor-muş. (be-IMPRF-mIş-3sg)
'Reportedly, thus, s/he was ending up seeing Paris.'

(60) a. ??Böylece Paris'i gör-müş ol-makta-yız. (be-mAktA-1pl)
'Thus we are ending up seeing Paris.'

b. ?Böylece Paris'i gör-müş ol-makta-ydı. (be-mAktA-DI-3sg)
'Thus s/he was ending up seeing Paris.'

c. ?Böylece Paris'i gör-müş ol-makta-ymış. (be-mAktA-mIş-3sg)
'Reportedly, thus, s/he was ending up seeing Paris.'

The form in (61a) is used in conditional structures co-occurring with an if-clause

e.g. *zaman kalırsa* 'if time remains.' (61b-c) express the modally distinct counterparts

of (61a).

(61) a. (Zaman kal-ır-sa) (böylece) Paris'i de gör-müş ol-ur-uz. (be-AOR-1pl)
'(Thus) we will have gotten to see Paris if we have time left.'

b. Böylece Paris'i gör-müş ol-ur-du. (be-AOR-DI-3sg)
'Thus s/he would have gotten to see Paris.'

c. Böylece Paris'i gör-müş ol-ur-muş. (be-AOR-mIş-3sg)
'Reportedly, thus, s/he would have gotten to see Paris.'

3.3.2. *–(y)AcAK ol-*

Periphrastic forms with V–*(y)AcAK ol-*-T/A marker in (62-67) provide

information about an intended change of state, and whether the change of state is

realized or not is specified by the context. In the first case, a change of state is realized

but the outcome is not as expected, resulting in frustration, as in (62a).[32] In the second

case, there is an attempt but the change of state remains unrealized, as in (62a') (cf.

Kornfilt (1997:341)). The inner morpheme –*(y)AcAK* contributes to these readings as a

marker of future and prospective with its non-factual modal overtone. (62b) is the modally distant counterpart of (62a), the realized change of state, though with a negative result.

(62)   a. **Kırk yılda bir** tatile çık-acak ol-du, onda da fırtınaya tutuldu.
once in a blue moon holiday-DAT go on-FUT be-DI, ended up in a storm.
'S/he happened to go on a holiday once in a blue moon and ended up in a storm.'

a'. **Kırk yılda bir** tatile çık-acak ol-du, onda da izin al-a-ma-dı.
once in a blue moon holiday-DAT go on-FUT be-DI, but could not get permission
'S/he attempted to go on a holiday once in a blue moon but could not get permission.'

b. Kırk yılda bir tatile çık-acak ol-du-ydu. (be-DI-DI-3sg)
'S/he once happened to go on holiday.'

The example in (63a) is the reportative counterpart of (62a). (63b) expresses modal distance, while (63c) is the reportative of (63b).

(63)   a. Kırk yılda bir tatile çık-acak ol-muş. (be-mIş-3sg)
'Reportedly s/he happened to go on holiday.'

b. Kırk yılda bir tatile çık-acak ol-muş-tu. (be-mIş-DI-3sg)
'S/he had happened to go on holiday.'

c. Kırk yılda bir tatile çık-acak ol-muş-muş. (be-mIş-mIş-3sg)
'Reportedly s/he happened to go on holiday.'

As for (64), two instances of the *–(y)AcAK* morpheme are redundant because they do not contribute any aspectual meaning that cannot be attained without resorting to periphrasis.

(64)   a. *Kırk yılda bir tatile çık-acak ol-acak. (be-FUT-3sg)

b. *Kırk yılda bir tatile çık-acak ol-acak-tı. (be-FUT-DI-3sg)

c. ?Kırk yılda bir tatile çık-acak ol-acak-mış. (be-FUT-mIş-3sg)
'?Reportedly s/he was going to attempt to go on holiday.'

The *–(I)yor* marker on the auxiliary in (65) triggers an iterative reading such that a number of attempts recur over a period in (65a). While (65b) is the past imperfective

of the inner "change of state with a negative result" meaning, (65c) is reportative.

(65)   a. Kırk yılda bir tatile çık-acak ol-uyor, ama her seferinde aynı terane.
once in a blue moon holiday-DAT go on-FUT be- IMPRF-3sg, but each time the
same old story
'S/he happens to go on holiday once in a blue moon, but each time the same old story.'

       b. Kırk yılda bir tatile çık-acak ol-uyor-du. (be-IMPRF-DI-3sg)
'S/he would happen to go on holiday.'

       c. Kırk yılda bir tatile çık-acak ol-uyor-muş. (be-IMPRF-mIş-3sg)
'Reportedly s/he would happen to go on holiday.'

The highly restricted $-mAktA$[33] is not expected to co-occur with a marker of non-factuality in (66a-c), as it particularly conveys a progressive viewpoint of a factual event. Finally, (67) is most felicitous in narratives.

(66)   a. *Kırk yılda bir tatile çık-acak ol-makta. (be-mAktA-3sg)

       b. *Kırk yılda bir tatile çık-acak ol-makta-ydı. (be-mAktA-DI-3sg)

       c. *Kırk yılda bir tatile çık-acak ol-makta-ymış. (be-mAktA-mIş-3sg)

(67)   a. Kırk yılda bir tatile çık-acak ol-ur. (be-AOR-3sg)
'S/he happens to go on holiday.'

       b. Kırk yılda bir tatile çık-acak ol-ur-du. (be-AOR-DI-3sg)
'S/he would happen to go on holiday.'

       c. *Kırk yılda bir tatile çık-acak ol-ur-muş. (be-AOR-mIş-3sg)

3.3.3. –(I)yor ol-, -mAktA ol-

Periphrastic forms with V–(I)yor/-mAktA ol-T/A marker[34] in (68-74) express (i) the beginning of a continuative situation, as in (68-69) and (ii) the lack of a change of state, i.e. the current state continues uninterruptedly, as in (70).

(68)   a. Böylelikle sonuc-u bekl-iyor ol-du.
thus result-ACC wait-IMPRF be-DI-3sg
'Thus s/he ended up waiting for the result.'

       b. Böylelikle sonuc-u bekl-iyor ol-du-ydu. (be-DI-DI-3sg)
'Thus s/he ended up waiting for the result.'

Note that the inner morphemes –*(I)*yor/-*mAktA* basically express imperfectivity and continuity as simple forms. In (68) the initial endpoint of a continuative situation is highlighted. The perfective (bounded) –*DI* on the auxiliary *ol-* results in a shifted ingressive reading in the continuative (unbounded) –*(I)yor* (cf. Chapter 5). The modally distinct reportative counterpart of (68) is in (69).

(69)   a. Böylelikle sonuc-u bekl-iyor ol-muş. (be-mIş-3sg)
        'Reportedly, s/he has ended up waiting for the result.'

        b. ?Böylelikle sonuc-u bekl-iyor ol-muş-tu. (be-mIş-DI-3sg)
        'Thus s/he had ended up waiting for the result.'

        c. Böylelikle sonuc-u bekl-iyor ol-muş-muş. (be-mIş-mIş-3sg)
        'Reportedly, thus, s/he ended up waiting for the result.'

(70) explicitly specifies that there is no change of state. A future continuative situation is imperfectively presented, i.e. future imperfective, as schematized in (70d).

(70)   a. Böylelikle sonuc-u bekl-iyor ol-acak. (be-FUT-3sg)
        'Thus s/he will be waiting for the result.'

        b. Böylelikle sonuc-u bekl-iyor ol-acak-tı. (be-FUT-DI-3sg)
        'Thus s/he was going to be waiting for the result.'

        c. Böylelikle sonuc-u bekl-iyor ol-acak-mış. (be-FUT-mIş-3sg)
        'Reportedly, thus, s/he will be waiting for the result.'

        d. ....TU..........[$_{TS}$....TT...].....   (future imperfective)

In (71) two instances of the same suffix co-occur. While (71a) is infelicitous, (71b) denotes the lack of change in a continuing state, which van Schaaik (2001) expresses as "we were/happened to be (continuously) doing sth." The reportative of (71b) is in (71c). The co-occurrence of –*(I)yor* and –*mAktA* seems highly infelicitous, as in (72a-c).

(71)   a. ??Böylelikle sonuc-u bekl-iyor ol-uyor. (be-IMPRF-3sg)

b. Dut ağacının üzerinde otur-uyor ol-uyor-du-k   (van Schaaik's ex. 23)
mulberry tree-gen in sit-pres2 ol-pres2-proj1-agr1p
'It occurred that we were sitting in a mulberry tree.'

c. Böylelikle sonuc-u bekl-iyor ol-uyor-muş. (be-IMPRF-mIş-3sg)
'Reportedly, thus, s/he was in the process of waiting for the result.'

(72)   a. *Böylelikle sonuc-u bekl-iyor ol-makta. (be-mAktA-1pl)

b. ??Böylelikle sonuc-u bekl-iyor ol-makta-ydı. (be-mAktA-DI-3sg)
'Thus s/he was in the process of waiting for the result.'

c. ??Böylelikle sonuc-u bekl-iyor ol-makta-ymış. (be-mAktA-mIş-3sg)
'Reportedly, thus, s/he will be waiting for the result.'

The examples in (73a-c) seem to be the habitual counterparts of (71a-c) above.

For example, (73b) means "it used to happen/occur or as "it happened regularly that..."

(cf. van Schaaik (2001:171)). The T/A markers on the auxiliary seem to add a further

habitual meaning on the inner aspectual meaning of the periphrasis, i.e. lack of change in

a continuing situation.

(73)   a. Böylelikle sonuc-u bekl-iyor ol-ur. (be-AOR-1pl)
'Thus s/he will be waiting for the result.'

b. [...] bank-lar-da, bazen, bir iki kişi otur-uyor ol-ur-du. (van Schaaik's ex. 22)
bench-pl-loc sometimes onw two person sit-pres2 ol-pres1-proj1
'[...] there used to be one or two people sitting on the benches.'

c. Böylelikle sonuc-u bekl-iyor ol-ur-muş. (be-AOR-mIş-3sg)
'Reportedly, thus, s/he will be waiting for the result.'

The periphrastic combinations with –mAktA are hardly acceptable as illustrated

in (74) below.

(74)   a. Böylelikle sonuc-u bekle-mekte *ol-du/*ol-muş /??ol-acak/*ol-uyor/
*ol-makta/*ol-ur.

b. Böylelikle sonuc-u bekle-mekte *ol-du-ydu/*ol-muş-tu/ol-acak-tı/ol-uyor-du
/*ol-makta-ydı/ol-ur-du.

c. Böylelikle sonuc-u bekle-mekte *ol-du-ymuş/*ol-muş-muş/ol-acak-mış
/ol-uyor-muş/*ol-makta-ymış/ ol-ur-muş

3.3.4. –Ar/Ir ol-

The periphrastic V–*Ar/Ir ol*-T/A marker forms in (75-81) denote a realized change of state both in affirmative and negative contexts. The affirmative periphrastic form -*Ar oldu* in (75a) expresses ingressivity, i.e. the initial endpoint of a situation. On the other hand, the negative form -*mAz ol-du* in (76) bearing the negative marker –*mA* expresses egressivity, i.e. the final endpoint of a habitual situation. In both cases, the inner morpheme –*Ar/Ir* seems to retain its basic function as a marker of habituality, as suggested by the compatibility of the unspecified frequency adverb *sık sık* with the forms.

(75)   a. Böylece **sık sık** ara-r ol-du.
         thus frequently call-AOR be-DI-3sg
         'Thus s/he has got into the habit of calling frequently.'

       b. Böylece **sık sık** ara-r ol-du-ydu. (be-DI-DI-3sg)
         'Thus s/he ended up calling frequently.'

(76)   **Artık** işinden zevk al-ma-z ol-du. (van Schaaik's ex. 44)
       anymore work-ps3-abl enjoy-neg-pres1 ol-past1
       '(S)he doesn't like her/his work any more.'
       '(S)he began to enjoy her/his work less and less.'

As was illustrated above for the other periphrastic forms, the T/A markers on the auxiliary do not affect the overall aspectual meaning of the periphrastic form. Rather, they serve to establish temporal location or provide modal distinctions. For example, (77a) is the reportative counterpart of (75a) and (77c) is the reportative of (77b), which introduces a past PO at which the habitual situation started.

(77)   a. Böylece **sık sık** ara-r ol-muş. (be-mIş-3sg)
         'Reportedly thus s/he has got into the habit of calling frequently.'

       b. Böylece **sık sık** ara-r ol-muş-tu. (be-mIş-DI-3sg)
         'Thus s/he had ended up with the habit of calling frequently.'

c. Böylece sık sık ara-r ol-muş-muş. (be-mIş-mIş-3sg)
'Reportedly thus s/he has got into the habit of calling frequently.'

The –(y)AcAK in (78a) indicates that a habitual situation will begin at a future PO, i.e. ingressive habitual. (78c) is the reportative of (78b), which has a past prospective (narrative) reading.

(78)　a. Böylece sık sık ara-r ol-acak. (be-FUT-3sg)
'Thus s/he will get into the habit of calling frequently.'

b. ?Böylece sık sık ara-r ol-acak-tı. (be-FUT-DI-3sg)
'Thus s/he would get into the habit of calling frequently.'

c. Böylece sık sık ara-r ol-acak-mış. (be-FUT-mIş-3sg)
'Reportedly thus s/he will get into the habit of calling frequently.'

In (79) a gradual change of state into a habitual situation is expressed. (79c) is the reportative counterpart of (79b), which expresses past imperfectivity.

(79)　a. Böylece sık sık ara-r ol-uyor. (be-IMPRF-3sg)
'Thus s/he is getting into the habit of calling frequently.'

b. Böylece sık sık ara-r ol-uyor-du. (be-IMPRF-DI-3sg)
'Thus s/he was getting into the habit of calling frequently.'

c. Böylece sık sık ara-r ol-uyor-muş. (be-IMPRF-mIş-3sg)
'Reportedly thus s/he is getting into the habit of calling frequently.'

As expected, the combination of -mAktA with –Ar/Ir in (80a-b) is rather awkward, though (80c) sounds more felicitous with the indirect evidence marker –mIş. The co-occurrence of two –Ar/Ir markers in (81a) is highly infelicitous, except in narratives. Since the outer –Ar/Ir is redundant, a hypothetical (modal) meaning, e.g. in (81c), arises.

(80)　a. *Böylece sık sık ara-r ol-makta. (be-mAktA-3sg)

b. ??Böylece sık sık ara-r ol-makta-ydı. (be-mAktA-DI-3sg)
'Thus s/he was in the process of calling frequently.'

c. ?Böylece **sık sık** ara-r ol-makta-ymış. (be-mAktA-mIş-3sg)
'Reportedly thus s/he is in the process of calling frequently.'

(81)   a. ??Böylece **sık sık** ara-r ol-ur. (be-AOR-3sg)

b. ??Böylece **sık sık** ara-r ol-ur-du. (be-AOR-DI-3sg)
'Thus s/he would get into the habit of habitually calling frequently.'

c. Böylece **sık sık** ara-r ol-ur-muş. (be-AOR-mIş-3sg)
'Thus s/he would get into the habit of calling frequently.'

3.4. Discussion

In this chapter, Turkish T/A morphemes and periphrastic expressions have been analyzed within the framework of the time-relational approach. One of the questions raised with respect to Turkish T/A morphemes and time-relational schemata was whether there were any semantic distinctions not covered by this system. As the time-relational framework is designed to cover only temporal/aspectual distinctions, the modal notions interwoven into the Turkish temporal/aspectual system still remain to be accounted for. As for aspectual distinctions such as iterativity/repetition, genericity and habituality, we have seen that the present application of the theoretical tools is insufficient to represent such notions time-relationally. In Chapter 4, a number of theory-internal modifications will be proposed to compensate for such shortcomings.

Another aim was to determine the schemata to represent T/A morphology and to see if there was a one-to-one correspondence between time schemata and verbal forms. Indeed, it was noted that there are cases where there is a one-to-one correspondence between time schemata and verbal forms, such as *–mAktA* which is represented only by the imperfective schema. On the other hand, with forms such as *–(y)DI* and *–(y)AcAK*, there is no one-to-one correspondence between verbal morphology and schematic representations.

In contrast, three distinct morphemes, namely *-DI, -DI-yDI* and *–mIş-DI* express, as one of their functions, past perfective. Similarly, *-(y)AcAK, -(I)yor* and *–Ar/Ir* express futurity as one of their functions. In other words, in both cases, many morphemes converge with respect to a T/A notion and correspond to a single time-schematic representation. Yet each morpheme is distinguished in terms of epistemic modal notions such as (i) evidentiality, (ii) certainty and (iii) factuality. Therefore, the choice of one of the three forms depends on (i) the nature of the evidence/information the speaker has, e.g. direct vs. indirect, reported, inferred, etc., (ii) the attitude of the speaker towards the truth value of the proposition, e.g. certainty vs. doubt and (iii) whether the event is realized at TU or not, i.e. factual vs. non-factual. This behavior has two implications: (i) epistemic modality is crucial in the choice of particular T/A morphemes, and (ii) Turkish T/A morphemes are underspecified (cf. Sezer (2001), Erguvanlı-Taylan (2001)) such that they can serve multiple T/A functions without causing semantic incompatibility. This further explains why T/A adverbials are essential in distinguishing between various T/A functions of the markers. It has been observed that in the perfective and imperfective viewpoints, adverbials are associated with TS and do not result in ST shifts, since they merely determine the temporal location of the TS (cf. Chapter 6 for "Position" adverbials).

Periphrastic expressions have been observed to convey meanings such as ingressive, egressive, frustrative, etc. The use of periphrastic forms for the expression of such notions suggests that they are not part of the core inventory of aspectual notions of the language, at least not as central as to be expressed morphologically. However, all periphrastic forms in Turkish seem to share the change of state meaning. In fact, the auxiliary *ol-* functions like an outer lexical "layer" of aspectual specification and

imposes a change of state meaning into the inner morphemes, which preserve their basic

meaning in simple forms (cf. **Table 3.5**). The notion of change of state will be taken up

again and discussed in detail in Chapter 5, as it seems to be indirectly expressed not only

by periphrastic forms but also by derivational morphemes, perfect of result and even by

adverbials (cf. § 5.1.2, § 6.3.2).

INNER MORPHEME & BASIC FUNCTION	PERIPHRASTIC FORM & RESULTANT FUNCTION	
-mIş	*-mIş ol-*	
perfectivity, completion	realized change of state (with resultant state)	
-AcAK	*-AcAK ol-*	
future, prospective	realized change of state (negative outcome)	unrealized change of state (attempt)
-(I)yor/-mAktA	*-(I)yor/-mAktA ol-*	
imperfective, progressive	realized change of state (ingressive)	no change of state (continuity of current state)
-Ar/Ir	*-Ar/Ir ol-*	*-mAz ol-*
habituality	realized change of state (ingressive)	realized change of state (egressive)

Table 3.5: Change of state as expressed by periphrastic forms

Tenses	Composite schemata (T/A)	Ex.
Perfective: TT overlap TS (..........TT/TS...............)		
Past: TT before TU ........TT.........TU.....	TT/TS & TT before TU (past + perfective) ....TT/TS.........TU.............	8
Future: TT after TU ....TU........TT.....	TT after TU & TT/TS (future + perfective) ....TU......TS/TT......	9
Present: TT overlap TU ....TU/TT.........	TT/TU & TT/TS (present + perfective) ....TU/TT/TS.........	10
Imperfective: TT in TS (...........[TS...TT..]..............)		
Past: TT before TU ........TT.........TU.....	TT before TU & TT in TS (past + imperfective) ....[TS...TT...]........TU.....	11
Future: TT after TU ....TU........TT.....	TT after TU & TT in TS (future + imperfective) ....TU..........[TS....TT...].....	12
Present: TT overlap TU ....TU/TT.........	TT/TU & TT in TS (present + imperfective) ....[TS...TU/TT...]......	13
Perfect: TT after TS (.........TS.........TT..........)		
Past: TT before TU ........TT.........TU.....	TT after TS & TT before TU (past + perfect) ........TS........TT........TU......	14
Future: TT after TU ....TU........TT.....	TT after TU & TT after TS (future + perfect) ....TU......TS......TT... ....TU/TS......TT......... ....TS.....TU....TT.....	15
Present: TT overlap TU ....TU/TT.........	TT/TU & TT after TS (present + perfect) ....TS....TU/TT.........	16
Prospective: TT before TS (......TT.........TS............)		
Past: TT before TU .........TT..........TU.....	TT before TU & TT before TS (past + prospective) ....TT......TS......TU... ....TT......TS/TU......... ....TT.....TU....TS.....	17
Future: TT after TU ....TU........TT.....	TT after TU & TT before TS (future + prospective) ..TU......TT.....TS.........	18
Present: TT overlap TU ....TU/TT.........	TT/TU & TT before TS (present + prospective) ....TU/TT.....TS........	19

Table 3.2: Time-relational representations of tense and aspect

Simple forms	Ex.	Function	Schematic representation, Ex.
-*(I)DI*	(21)	a. past perfective	.........TT/TS.......TU........... (8)
	(22)	b. present perfect	.......TS....TU/TT......... (16)
	(23)	c. present perfective	.........TU/TT/TS......... (10)
	(24)	d. present prospective	.........TU/TT.....TS....... (19)
-*(I)mIş*	(25)	a. past perfective	.........TT/TS.......TU......... (8)
	(26)	b. present perfect	.......TS....TU/TT......... (16)
-*(y)AcAK*	(27-28)	a. future perfective	.....TU......TS/TT...... (9)
	(27-28)	b. future prospective	.....TU...TT.....TS........ (18)
	(29)	c. present prospective	.........TU/TT.....TS....... (19)
-*(I)yor, -mAktA*	(30)	a. present imperfective	.........[TS...TU/TT...]...... (13)
	(32a)	b. future perfective	.....TU......TS/TT...... (12)
	(32b)	c. present prospective	.........TU/TT.....TS....... (19)
	(31a)	d. *stativity*	---
	(31b)	e. *habituality*	---
-*Ar/Ir*	(33a-b)	a. *habituality*	---
	(34-35)	b. *genericity*	---
	(36)	c. future perfective	.....TU......TS/TT...... (12)

Table 3.3: Simple Turkish T/A markers and their schematic representation discussed in Chapter 3

	Ex.	Function	Schematic representation
Complex forms with –*(I)DI*			
-DI-yDI	(37, 38b, 41a)	past perfective	.........TT/TS.......TU.......... (8)
-mIş-DI	(40a,41a)	a. past perfective	.........TT/TS.......TU........... (8)
	(40b,41c)	b. past perfect	......TS........TT.......TU........ (14)
-(y)AcAK-DI	(42a, 43a-c)	past prospective	....TT......TS......TU... (17b)
			....TT......TS/TU......... (17c)
			....TT.....TU....TS..... (17d)
-(I)yor-DI, *-mAktA-yDI*	(44) (45)	a. past imperfective (b. *past habituality*)	.......[TS...TT...].........TU...... (11) ---
-Ar/Ir-DI	(46)	a. *past habituality*	---
Complex forms with –*(I)mIş*			
-mIş-mIş	(49)	present perfect	.......TS....TU/TT......... (16)
-(y)AcAK-mIş	(50)	future perfective	.....TU......TS/TT...... (9)
-(I)yor-mIş, - *mAktA-ymIş*	(51)	present/past imperfective	.........[TS...TU/TT...]...... (13) ....[TS...TT...].........TU...... (11)
-Ar/Ir-mIş	(52)	past imperfective	.........[TS...TT...].........TU...... (11)

Table 3.4: Complex Turkish T/A morphology and their schematic representation discussed in Ch. 3

CHAPTER FOUR

VIEWPOINT ASPECT IN TURKISH

4.0. Introduction

The present chapter deals with the expression of viewpoints in Turkish and their extended interpretations. The data will be analyzed with two major theoretical issues in mind: (i) the implications of time-relations between TS and TT for the semantic assertion conveyed in the sentence and (ii) the interaction of viewpoints with mereological structure of situations and quantificational reference.

Within the time-relational approach, grammatical aspect is defined in terms of overlap and order relations between TT and TS, as summarized in (1-4) below. In Chapter 3, a modified definition of the perfective, which was argued to capture the findings of Comrie (1976) and represent his classical definition, was proposed. Accordingly, the opposition between perfective vs. imperfective viewpoints is reflected in a total vs. partial overlap relation between TS and TT, as in (1a-b) and (2a-b), whereas perfect and prospective arise from an order relation between TS and TT, as in (3a-b) and (4a-b). This time-relational difference affects (i) the function of TT and (ii) the semantic assertion conveyed in a sentence.

(1)   a. TT overlap TS   perfective   (total overlap)
        b. ....TT/TS....................

(2)   a. TT contained in TS   imperfective   (partial overlap)
        b. ....[$_{TS}$ ...TT..]..............

(3)   a. TT after TS   perfect   (anteriority)
        b. ..............TS..............TT...........

(4)   a. TT before TS   prospective   (posteriority)
        b. ..............TT..........TS.............

Smith (1997:62) notes that viewpoints make visible the entire situation or a part of it. Since "only what is visible is asserted," (cf. Smith (1997:62)) the part of

the situation focused by the viewpoint is semantically relevant for truth-conditions and entailments, constituting conventional implicature and thus cannot be cancelled (cf. Grice (1975)). Time-relationally, in the perfective, TT overlaps with the whole TS, while in the imperfective TT overlaps with a subpart of TS. In that respect, TT makes visible the whole TS or a subpart of it by overlapping with it, thus functioning as "the time of assertion" in these viewpoints. On the other hand, in perfect and prospective, TT does not overlap with TS, and thus cannot be associated with the assertion. In fact, TT seems to function rather like "a point of orientation." This raises the first question as to how the assertion is conveyed in perfect and prospective, if indeed TT is not associated with the assertion. In § 4.3. modified definition of the perfect and prospective, which will account for the above mentioned facts, will be proposed.

The second question raised in the present chapter is the relation among viewpoints, mereological structure of situations and quantificational reference. It will be argued that the prototypical perfective (i) is ST-external, (ii) does not apply to statives and (iii) is characterized by quantized reference to situations. In contrast, the imperfective is (i) ST-internal and (ii) characterized by both quantized and cumulative reference to stative and non-stative situations alike. Time-relational representations, then, are required to capture these characteristics of the two viewpoints and the semantic assertion conveyed.

The chapter is organized as follows: in § 4.1. it will be argued that the total overlap between TT and TS accounts for the universal perfective viewpoint, in spite of cross-linguistic variation in its expression, especially in terms of completion. In fact, when Turkish is compared with SGaelic and Hindi, it is observed that these three languages stand on a continuum of morphologically expressed completion arising from varying degrees of cooperation between verbal morphology and NP arguments.

In § 4.2. it will be argued that (i) in the imperfective the partial overlap relation between TT and TS is essential, in spite of differences in behavior among its subcategories and that (ii) the general imperfective time-relational schemata can be elaborated to account for notions such as habituality, genericity and frequentatives, and the difference between stage-level statives and individual-level statives. The final section focuses on extended interpretations of the perfective and the imperfective and the implications thereof for the time-relational definition of TT.

4.1. The Perfective

For Smith (1997), the prototypical perfective has the following properties: (i) the situation is presented as a whole, (ii) the whole TS is included in the semantic assertion, (iii) it is informationally closed, (iv) it includes both initial (I) and final (F) endpoints, and (v) does not apply to states, which do not include endpoints. The perfective is illustrated by the Turkish accomplishment in (5a) and schematized in (5b).

(5)   a. Ece havuz-u doldur-du ama *havuz boş.
        Ece pool-ACC fill-PRF-3sg but pool empty
        'Ece filled the pool but *the pool is empty.'

        b. General schema for the perfective: I   F   (Smith (1997:66, ex.(9))
                                            //////////

As was schematized in (1b) above, it is argued that the time-relational definition of the perfective arising from the total overlap of TT with TS captures the insights of Comrie (1976) and Smith (1997), who note that a perfective situation is presented as a whole, with no explicit reference to internal temporal constituency. This definition can also account for cross-linguistic parametric variation (cf. Dahl (1985)), as it is based on an independent, universally applicable set-theoretical relation and, thus, is general enough to capture the perfective universally. Cross-linguistically,

marked perfective viewpoints exhibit variation in terms of (i) their applicability to states, (ii) the expression of completion and (iii) the span focused (cf. § 4.3. for extended interpretations of the perfective in Turkish).

4.1.1. Statives

As the prototypical perfective includes both initial and final endpoints of a situation, it does not apply to states which exclude endpoints. In addition, unbounded (mass) states have homogeneous mereological structure. These properties have a number of implications for the grammatical expression of the perfective.

Smith (1997:69) finds three relations between language-specific perfectives and statives. First, in English, perfective statives may both be open and closed informationally, as illustrated in (6a-b), adapted from (Smith (1997:70, ex. 17a-c)). Second, in Russian, Chinese and Navajo, statives do not occur with perfective at all (ibid:70). For example, in Chinese stative predicates such as *bing* 'sick' in (6c) appearing with the perfective *–le* yield an inchoative (ingressive/inceptive) reading (also cf. Comrie (1976)), as illustrated by (6c) below. Third, the French perfective presents all situations closed including the endpoints, as with the *Passe Composé* (perfective past tense) in (6d).

(6)   a. Jennifer knew Turkish but she has forgotten it all. (closed)

b. Jennifer knew Turkish and she still knows it. (open)

c. Mali bing-le. (Smith (1997:70), ex. (18a))
Mali sick-LE
'Mali got sick.'

d. *Marie a vécu à Paris et elle y vit encore. (Smith (1997:70), ex. (16b))
'*Marie lived in Paris and she still lives there.'

Turkish perfective seems to exhibit the latter two relations depending on the nature of the stative verb. As in (7a), the perfective *–DI* appearing on a psychological

verb (cf. Sezer (2001)) may represent a change of state, i.e. the initial endpoint of a state. This is the ingressive/inceptive reading, like in the Chinese (6c). Like the French (6d), with "verbs of location," Turkish perfective is informationally closed, including both endpoints, as illustrated in (7b).[1] In order to get the open and closed interpretations of the English statives in (6a-b), the verb *bil-* 'know' in (7c) must be marked with the imperfective *–(I)yor* followed by *–(I)DI*. In fact, the verbal stative in (7c) cannot appear with the general perfective marker *–DI* in the intended sense, as illustrated by (7c') (cf. Chapter 5 for the behavior of non-verbal statives with *–(I)DI*.)

(7)   a. Bu elbise-yi beğen-di-m.
       this dress-ACC like-PRF-1sg
       'I like this dress.'

       b. Meltem Paris'te otur-du ve ***hâlâ** orada otur-uyor.
       Meltem Paris-LOC live-PRF-3sg and still there live-IMPRF-3sg
       'Meltem lived in Paris and she still lives there.'

       c. Cem Çince bil-iyor-du ve **hâlâ** bil-iyor.// ama unut-tu.
       Cem Chinese know-IMPRF-PAST and still know-IMPRF// but forget-PRF
       'Cem knew Chinese and he still does.// but he has forgotten it.'

       c'. *Cem Çince bil-di.
       Cem Chinese know-PRF

This seemingly inconsistent behavior is easily accounted for by the prototype approach adopted in Smith (1997), as each language has unmarked and marked values of the prototypical viewpoints. As illustrated in (7a-c), Turkish seems to be predictable as to the marked application of the perfective to verbal statives. As for the time-relational approach, the total overlap relation between TT and TS is preserved in all the cases. Although the time-relational schemata are blind to ST-based distinctions, it is theoretically possible to make the general perfective schema in (8a) sensitive to STs. For example, the focus on the initial endpoint of the state, i.e. the change of state in (7b) may be represented as in (8b), where TT overlaps with the

initial endpoint of TS.

(8)   a. ....TT/TS.................   (perfective)

       b. ....TT/TS ¡.................   ((perfective) ingressive)

With respect to quantificational reference, perfective is characterized by quantized reference, as situations are presented atomically, in their entirety. In fact, perfective has often been said to present situations as "punctual," leading to misconceptions (cf. Comrie (1976), Smith (1997)). In fact, even prototypical instantaneous events like semelfactives and achievements take time and punctuality is impressionistic (cf. Smith (1997:72)). This also accounts for the markedness of perfective statives, as unbounded statives are analogous to unbounded mass objects and the quantized reference in the perfective amounts to imposing implicit temporal bounds on the otherwise unbounded states (cf. Chapter 5 for details).

4.1.2. Perfective Morphology and Completion

Completion[2] is the total affectedness[3] of the object upon reaching the set terminal point/natural endpoint in achievements and accomplishments (cf. Krifka (1989)). Note that completion is not different from telicity in STs, though, as a term, it focuses on the total affectedness of objects involved in a situation (cf. Chapter 5 for details).

Completion exhibits cross-linguistic variation both in its linguistic expression and interaction with the perfective morphology. For example, in English, the final endpoint (F) included in the perfective implies termination for atelic STs and completion for telic ones. On the other hand, in Chinese, termination and completion are expressed separately for all STs (cf. Smith (1997:67-68)).[4] Three cases of variation will be illustrated in the relation between perfective morphology and the expression of completion by data from three genetically unrelated languages, namely

Turkish, Hindi and Modern Scottish Gaelic. This variation arises from the relative weight of the contribution of morphology, ST, NP arguments and adverbials.

In the first case, "neutral" perfective morphology does not imply completion/total affectedness, leaving other grammatical elements to express completion. Singh (1998:173) notes that in Hindi, Chinese and Japanese, the perfective only implies termination but not completion implied in an accomplishment, as illustrated in (9). Note that in the Japanese example in (9) from Singh (1998:172, ex. 4), the English translation sounds contradictory.

(9)   watashi-wa keeki-o tabeta dakedo keeki-wa mada nokotteiru
        I-NOM cake-ACC ate-PERF but cake-NOM still remains
        'I ate the cake but some of it still remains.'

In Hindi, completion is signalled by the morphological structure of the predicate. The same object, i.e. five apples, appears in both (10a-b) below from Singh (1998, exx. 37, 38 respectively). While the simple verb in (10a) yields a partitive reading, i.e. each of the apples is affected and the natural endpoint is reached when the fifth apple is bitten, the compound verb in (10b) results in a completive reading, i.e. all the apples are entirely consumed. On the other hand, as the translation illustrates, the quantized count object in both (10a) and (10b) is totally affected in English.

(10)   a. amu ne pããc seb khaaye   (simple verb-partitive)
        Amu ERG five apples eat-PERF
        'Amu ate five apples.'(not necessarily entirely, but each of the apples was affected.)

        b. amu ne pããc seb khaa liye   (compound verb-completive)
        Amu ERG five apples eat take-PERF
        'Amu ate five apples.' (entirely)

Singh (1998) attributes the "neutral" perfective to the lack of articles in Hindi. Indeed, both count NPs (*seb* means an apple, the apple, some mass of apple and any part of apple) and mass NPs (*vaain* is both wine and the wine) are ambiguous

between definite and indefinite readings. In addition, telic STs receive an unbounded/atelic reading with partially affected objects. In short, neither perfective morphology nor NP arguments are relevant in the expression of completion, but compound verbs are.

In the second case, exemplified by Modern Scottish Gaelic (henceforth SGaelic), completion is expressed by the "telic" perfective morphology, independently of other grammatical elements. The intransitive activity in (11) has an atelic reading in English, while its SGaelic counterpart in (12) is telic, because the SGaelic perfective (past tense) morphology is by default telic, irrespective of NP arguments or situation type. In fact, (12) refers to a specific running event and would be ungrammatical with *for an hour* adverbs (cf. Ramchand (1997:42)). As can be expected, SGaelic perfective does not apply to statives,[5] in analogy to Russian and Navajo (cf. § 4.1.1. above). When a stative verb like *want* as in (13) is marked with perfective morphology, it can only get a telic accomplishment reading. In other words, SGaelic perfective morphology is always telic.

(11) He ran for two hours.

(12) Ruith e.   Ramchand (1997:42, ex. 27)
      Run-PAST he-DIR
      'He ran.'

(13) Dh'iàrr Alasdair biscaid.   Ramchand (1997:43, ex. 31)
      Got Alasdair a biscuit
      'Alasdair got/asked for a biscuit.' (actual accomplishment reading)
      '*Alasdair wanted a biscuit.' (intended stative reading)

In the third case, perfective morphology, NP arguments, case and adverbs compositionally specify completion, as exemplified by Turkish (also Romance languages and English (cf. Ramchand (1997)). The effect of Case[6] in Turkish in the expression of completion is illustrated by (14-17) below. In (14-15) there are

(unbounded) *for an hour* adverbs, while in (16-17) (bounded) *in an hour* adverbs appear. If Turkish perfective morphology were by default telic like SGaelic, we would expect unbounded adverbs to be incompatible with perfective morphology in (14a, 15a) but not with imperfective morphology in (14b, 15b). Likewise, bounded adverbs would be ungrammatical with imperfective morphology in (16b, 17b), but not with perfective morphology in (16a, 17a). However, the perfective examples in (14a, 15a, 16a and 17a) do not differ in grammaticality from their imperfective counterparts in (14b, 15b, 16b and 17b) respectively.

(14) a.*Saatlerce balığ-ı tut-tu.   (NP-ACC, perfective, *for an hour)
      for hours fish-ACC catch-PRF
      'He caught the fish *for hours.'   (intended reading, *accomplishment)
      'He held the fish in his hand for hours.' (actual reading, activity)

      b.*Saatlerce balığ-ı tut-uyor.   (NP-ACC, imperfective, *for an hour)
      for hours fish-ACC catch-IMPRF
      'He is catching the fish *for hours.' (intended reading, *accomplishment)
      'He is holding/holds the fish in his hand for hours.' (actual reading, activity)

(15) a. Saatlerce balık tut-tu.   (NP-NOM, perfective, for an hour)
      'He caught fish for hours.'   (activity)

      b. Saatlerce balık tut-uyor.   (NP-NOM, imperfective, for an hour)
      'He catches fish for hours.'   (activity)

(16) a. Balığ-ı bir saatte tut-tu.   (NP-ACC, perfective, in an hour)
      'He caught the fish in an hour.'   (accomplishment)

      b. Balığ-ı bir saatte tut-uyor.   (NP-ACC, imperfective, in an hour)
      'He catches the fish in an hour.'   (iterative accomplishment)

(17) a.*Bir saatte balık tut-tu.   (NP-NOM, perfective, *in an hour)
      '*He caught fish in an hour.'   (intended reading, *accomplishment)

      b.*Bir saatte balık tut-uyor.   (NP-NOM, imperfective, *in an hour)
      '*He catches fish in an hour.'   (intended reading, *accomplishment)

Also note that in (14) the Accusative singular definite count NP is ungrammatical in the intended (telic) accomplishment reading, as the unbounded adverb shifts the ST into activity. An activity reading is obtained in (15) with the

Nominative indefinite non-specific count NP incorporated into the verb (cf. Nilsson (1984, 1985)) and the unbounded adverb. It seems that in Turkish completion is more readily expressed by nominal marking and adverbs than perfective morphology per se (cf. § 5.1.1. for further details).

Table 4.1 below summarizes our findings about the relative significance of perfective morphology and NP arguments in the expression of completion in Hindi, SGaelic and Turkish. Turkish depends on NPs and Case for the expression of completion, as perfective morphology is not specifically telic or atelic. On the other hand, neither SGaelic nor Hindi depends on NP arguments to define completion. These languages have other compensatory strategies, i.e. perfective morphology in SGaelic and compound verbs in Hindi. As for the type of bounds the perfective implies, it seems that the perfective imposes an implicit bound representing termination in Hindi and Turkish, whereas in SGaelic perfective morphology implies the intrinsic bound associated with telic events, thus making ST information redundant (cf. Chapter 5).

Language	Perfective morphology	NPs	Compensatory strategy
Hindi	termination (implicit bound)	no	compound verb
Turkish	termination (implicit bound)	yes	Case and adverbs
SGaelic	completion (intrinsic bound)	no	no

Table 4.1: The table showing the relative weight of perfective morphology, NPs and other compensatory strategies in the expression of completion in Hindi, Turkish and SGaelic.

In sum, as argued above, the difference between Hindi, SGaelic and Turkish arises due to the relative weight of different linguistic devices used to express completion. The modified definition of the perfective seems general enough to account for all three languages, as the only necessary and sufficient condition for the perfective is a total overlap relation between TS and TT, irrespective of NPs or

adverbials. Note that even in the "neutral" Hindi perfective, the event is *presented as a whole*, though the objects are not totally affected (cf. (10a-b)). This provides support for Comrie's (1976) and Smith's (1983, 1986, 1997) definition of perfective aspect where the speaker presents the situation without explicit reference to its internal temporal constituency, represented by 'total overlap' in the present study.

4.2. The Imperfective

For Smith (1997), the prototypical imperfective has the following properties: (i) the situation is presented partially, (ii) a subinterval of the situation is included in the semantic assertion, (iii) it is informationally open, and (iv) it excludes both initial (I) and final (F) endpoints. Smith (1997:73) distinguishes between (i) the general imperfective, which applies to all STs, and (ii) the progressive, which only applies to non-statives. The general imperfective in Turkish is illustrated by the preliminary activity stage of an accomplishment in (18a) and schematized in (18b).

(18) a. Ece havuz-u doldur-uyor; yarı-sı dol-du bile.//*ama **hâlâ** bomboş.
      Ece pool-ACC fill-IMPRF-3sg; half-3sg fill-PRF already//but still empty
      'Ece is filling the pool and already it is half full.//*it is still totally empty.'

      b. General imperfective schema: **I....//////...F**   (Smith (1997:73, ex.23))

This definition captures Comrie's (1976) insight that the speaker makes explicit reference to the internal temporal constituency of a situation in the imperfective. Time-relationally, the imperfective is represented by a partial overlap relation between TT and TS, as illustrated in (2b) above repeated here as (19). In this relation, the assertion is limited to a subinterval of the entire situation, i.e. the subinterval made visible by TT.

(19) ....[$_{TS}$......TT....]........

Note that Klein et al. (2000) do not distinguish among STs or between any subcategories of the imperfective. However, aspectual notions such as frequentative,

habitual, generic, etc. and individual-level vs. stage-level statives all seem to be expressed by imperfective morphology in Turkish. Three questions follow: (i) what is the common property of these notions such that they are expressed by common morphology?, (ii) what are the subcategories of the imperfective in Turkish? and (iii) can the time-relational schema in (19) be refined to account for such notions? The answers to these questions suggest the following categorization of the imperfective in Turkish (cf. **Table 4.2**), which will be shown to follow from the behavior and distribution of the above mentioned notions.

SUBCATEGORIES OF THE IMPERFECTIVE IN TURKISH					
STATIVES		NON-STATIVES			
Single event		Single event non-statives		Multiple-event non-statives	
Quantized reference	Cumulative reference	Quantized reference	Cumulative reference	Quantized reference	Cumulative reference
stage-level statives	individual-level statives location verbs	progressive continuous	---	frequentative	habitual generic

Table 4.2: The categorization of the imperfective proposed for Turkish

Notions expressed imperfectively seem to differ in three respects: (i) dynamism, (ii) mereological structure, and (iii) iterativity. First, as the imperfective operates ST-internally, there is a basic distinction between statives and non-statives. Second, mereological structure is directly related to quantificational reference, i.e. quantized vs. cumulative, to situations in analogy to objects in the sense of Krifka (1989). Third, Bybee (1985:152)[7] identifies a contrast "between an habitually-occurring and a merely continuing situation." In addition, Bybee et al. (1994:172, ex. 64) find evidence for the following diachronic development[8] in (20). Note that the continuative/continuous develops into progressive aspect, while frequentative evolves into habitual aspect.

(20)   iterative > continuative > progressive

                                                    >   imperfective > intransitive

       iterative > frequentative > habitual

There are two points to note here: (i) this contrast between continuous/progressive and frequentative/habitual derives from the same source notion, i.e. iterativity, and (ii) "a habitually occurring situation" is made up of multiple individual instances of the same kind of situation, while "a merely continuing situation" is a single situation, regardless of whether it is stative or non-stative.

In order to provide evidence for the above arguments, the following four criteria, which bring together the time-relational and mereological assumptions, are proposed to analyze Turkish data: (i) semantic assertion conveyed through TT, (ii) structural vs. phenomenal description of situations (cf. Goldsmith & Woisetschlaeger (1982:80)), (iii) compatibility with aspectual adverbs, and (iv) quantificational reference.

First, the function of TT in semantic assertion is directly relevant to the time-relation representation of imperfectives and will lead to an elaboration of the general schema in (19) above. Second, a structural description involves those permanent qualities that characterize an entity, while a phenomenal description is limited to the observation of the current state of affairs (cf. Goldsmith & Woisetschlaeger (1982:80, et passim)). As for the adverbs, (i) the adverb *hâlâ* 'still' is only compatible with those situations that do not exclude the possibility of a change of state (cf. Chapter 6 for details), (ii) the adverb *tekrar/yine* 'again' is only compatible with situations that involve iterativity/repetition, and (iii) the adverb *şu anda* 'at the moment' is acceptable only if the situation is divisible into temporally distinct subintervals. Finally, cumulative vs. quantized reference to statives vs. non-statives will prove to be predictive for the behavior of notions expressed imperfectively.

4.2.1. Statives

States are non-dynamic situations characterized by homogeneous internal structure (cf. Comrie (1976), Yavaş (1980), Mourelatos (1981), Smith (1983, 1986, 1997, 1999), Verkuyl (1996), Iatridou et al. (2000), Bach (2002) among others). There are two major classes of stative predicates, namely stage-level predicates and individual-level predicates (cf. Carlson (2002)). Homogeneity makes states comparable to cumulative mass objects, e.g. *beer*, whose subparts are not distinct from one another and are characteristic of the whole (cf. Krifka (1989), Ramchand (1997)). In that respect, homogeneity and cumulativity seem to be analogous notions. However, there is one crucial difference between objects and situations, i.e. temporality. Like all situations, states are temporal intervals and the atomic time points constituting temporal intervals are linearly ordered (cf. Krifka (1989), Larson & Segal (1995), Chierchia & McConnell-Ginet (2000)). Two questions are in order: (i) can states be quantized like mass objects can? e.g. *beer* can be quantized/bounded with a measure phrase as in *a glass of beer* (cf. Krifka (1989)) and (ii) does linearity of temporal intervals affect the homogeneity/cumulativity of states?

Firstly, it will be argued that states may indeed receive quantized reference, which amounts to an eventive/perfective presentation, i.e. imposing implicit bounds on the unbounded continuity of a state. In fact, it is argued that the distinction between stage-level predicates and individual-level predicates follows from the distinction between quantized vs. cumulative reference respectively.

Secondly, homogeneity, otherwise called the subinterval property, is the property of a situation which holds true on all its subintervals. It will be argued that the subinterval property should be reconsidered, taking into consideration (i) quantificational reference, and (ii) the difference between linearly ordered temporal

intervals vs. ordinary unordered sets.

Stage-level statives seem to differ from individual-level statives in four respects: First, in the stage-level stative in (21) below, the assertion is limited to the subinterval made visible by TT. As illustrated by the acceptability of the entailments in (22), we cannot know if the stage-level property still holds true or not.

(21)   Müge hasta-ydı./burada-ydı.   (stage-level stative)
        Müge sick-PAST-3sg/here-PAST-3sg
        'Müge was sick/here.'

(22)   Müge burada-ydı ama **artık** değil /ve **hâlâ** burada.
        Müge here-PAST-3sg but anymore not/ and still here
        'Müge was here but she is not here anymore/and she still is.'

Second, (21) merely reflects an observation on the current state of affairs, not a characteristic property of the subject. Third, the stage-level stative in (23) below is compatible with the adverbs *hâlâ, tekrar* and *şu anda*. This suggests three related facts: (i) the state may undergo a change of state, (ii) the state may be iterated as another instance of the same kind of state, and (iii) the state is temporally divisible. These suggest that these adverbs specify a temporally bounded subinterval of the unbounded state made visible by TT.

(23)   Müge **hâlâ/yine/o anda** hasta-ydı./burada-ydı.
        M. still/again/at that moment sick-PAST/here-PAST-3sg
        'Müge was sick/here still/again/at that moment.

Fourth, (21) is similar to (24) in terms of the quantized reference to a mass object. Just like *a glass of beer* is a bounded instance of a cumulative mass, a stage-level stative is a bounded/quantized subinterval of an unbounded/cumulative mass.

(24)   Müge bir şişe bira iç-ti.   (mass-quantized)
        Müge a glass beer drink-PRF-3sg
        'Müge drank a glass of beer.'

However, temporality distinguishes between mass objects and states, even though both receive quantized reference. Let i, j, and k represent subintervals of a

state. As schematized in (25), every minimal subinterval of the state is linearly mapped on the temporal axis, such that if TT overlaps with the subinterval j that temporally succeeds i and precedes k, the assertion holds only for j and not for i or k. In that sense, the subinterval j made visible by TT is distinct from i and k, even though the minimal time points within j are homogeneous (cf. Rothstein (2004)).

(25) ....[$_{TS}$ ....[i......][j/TT.......][k..........]........]...............

Let us proceed with individual-level statives which contrast with stage-level statives in four respects: First, the assertion in (26a-c) is not limited to some subinterval made visible by TT, as illustrated by the unacceptability of (27a-b). The permanent, unbounded property of the subjects will always hold true, even though it is not linguistically made explicit. Second, as can be expected, (26a-c) are characterizing statements, i.e. a structural description in the sense of Goldsmith & Woisetschlaeger (1982:80). Third, the individual-level stative and the verb of location in (28a-b) do not allow an iterative *tekrar* or partial *o anda* reading. Nor are they compatible with *hâlâ*, as there is no possibility of change in such statives.

(26) a. Müge ile tanış-tı-m. Uzun boylu-ydu.   (individual-level stative)
Müge with meet-PRF-1sg. tall-PAST
'I met Müge. She was tall.'

b. Bu toprak-lar-da nice şehit yat-ıyor.   (location verb)
this soil-PL-LOC many martyr lie-IMPRF-3sg
'Many martyrs lie in this land.'

c. İki-yle iki dört ed-er.   (atemporal stative)
two-COM two four do-AOR-3sg
'Two and two makes four.'

(27) a. Müge uzun boylu-ydu ama *artık değil.
Müge tall-PAST but anymore not
'Müge was tall but *not anymore.'

b. Bu toprak-lar-da nice şehit yat-ıyor ama *artık değil.
this soil-PL-LOC many martyr lie-IMPRF-3sg but anymore not
'Many martyrs lie in this land but *not anymore.'

(28)   a. Müge ile tanış-tı-m. ***Hâlâ/*yine/*o anda** uzun boylu-ydu.
         Müge with meet-PRF-1sg. still/again/at that moment tall-PAST
         'I met Müge. She was tall *still/*again/*at that moment.'

         b. Bu toprak-lar-da nice şehit ***hâlâ/*yine/*o anda** yat-ıyor.
         this soil-PL-LOC many martyr still/again/at that moment lie-IMPRF-3sg
         'Many martyrs *still/*again/*at that moment lie in this land.'

Fourth, (26a-c) seem analogous to cumulative reference to a mass object as in (29), as any subinterval of the state is the same as any other subinterval. This "subinterval property" in individual-level statives sharply contrasts with that in the stage-level statives in (21) above. Note that the linear order of subintervals is no longer relevant, just like the unordered elements of any set (cf. Chierchia & McConnell-Ginet (2000)). This accounts for the observation that individual-level statives are atemporal, as in (26c).

(29)   Müge bira iç-ti.   (mass-cumulative)
         Müge beer drink-PRF-3sg
         'Müge drank beer.'

The following representation in (30) is proposed to represent (26a-c). The only difference from (19) above is the introduction of multiple TTs within TS. Note that, however, the individual TTs are not quantized, i.e. the number of TTs is not relevant. Each TT represents a subinterval that characterizes the entire event. As any subinterval that TT makes visible is no different from any other potential TTs/subintervals, the assertion encompasses the whole situation homogeneously. This is the time-relational representation of cumulative reference to unbounded (mass) states.

(30)   ......[$_{TS}$.....TT.....TT.....TT...]....   imperfective (individual-level statives)

In sum, it has been observed that the distinction between stage-level predicates and individual-level predicates follows from (i) the distinction between quantized vs. cumulative reference respectively and (ii) temporality, which has implications for "the

subinterval property." The general imperfective time-relational schema in (19) has

been refined to represent the cumulative reference in individual-level statives and

verbs of location, as in (30). **Table 4.3** summarizes our findings.

Statives (mass)	Quantificational reference	*hâlâ*	*tekrar*	*şu anda*	structural description
stage-level	Quantized: *bir şişe bira*	yes	yes	yes	no
individual-level	Cumulative: *bira*	no	no	no	yes
verbs of location	Cumulative: *bira*	no	no	no	yes

Table 4. 3: The difference between imperfective statives arising from quantized vs. cumulative reference and their compatibility with aspectual adverbs.

4.2.2. Non-statives

In this section we deal with the application of the general imperfective to non-

stative STs, namely activities, semelfactives, achievements, accomplishments. Like

statives, non-statives will be analyzed with emphasis on (i) the semantic assertion

conveyed through TT, (ii) structural vs. phenomenal description of situations (cf.

Goldsmith & Woisetschlaeger (1982:80)), (iii) compatibility with three aspectual

adverbs, and (iv) quantificational reference. In addition, two questions will be raised:

(i) what is the nature of subinterval property with respect to progressing activities?

and (ii) are progressive vs. continuous/continuative and habitual vs. generic distinct

subcategories of the imperfective?

As the imperfective focuses a subinterval of a situation, it is not expected to

apply to instantaneous semelfactive and achievements. Indeed, semelfactives are

shifted to multiple-event activity as in (31a), while the preliminary stages of

achievements are focused by the imperfective, without any implication as to

completion, as in (31b).

(31)   a. Esin **on dakika-dır** öksür-üyor.   (semelfactive)
           Esin ten minutes-DIr cough-IMPRF
           'Esin has been coughing for the past ten minutes.'

b. Süreyya finiş-e var-ıyor ve işte ip-i göğüsle-di.   (achievement)
Süreyya Finish-DAT arrive-IMPRF and there rope-ACC touch-PRF-3sg
'Süreyya is reaching the finishing line and there she has touched it.'

c. Ece havuz-u doldur-uyor; yarı-sı dol-du **bile**/*ve **tamamen** dolu. (accompl.)
Ece pool-ACC fill-IMPRF-3sg; half-3sg fill-PRF already//but totally full
'Ece is filling the pool and already it is half full.//*it is completely full.'

This partial view of the situation is also true for the accomplishment in (18a) repeated here as (31c). The imperfective focuses on the preliminary activity leading up to the completely full pool, yet, as the conjunct illustrates, the event has not reached its natural endpoint. Note that these are marked imperfectives (cf. Smith (1997:75)). Derived-level STs arising due to imperfective morphology will be considered in Chapter 5. The ensuing data will basically focus on activities that the general imperfective applies without resulting in ST-shifts.

4.2.2.1. Single Event Non-statives

Bybee et al. (1994) find strong evidence for a distinction between progressive vs. habitual aspects, though there does not seem to be any cross-linguistically attested distinction between the progressive and the continuous,[9] which differs from Comrie's (1976:25) classification of the imperfective. Following Bybee et al. (1994), we do not distinguish between progressive and continuous/continuative. There are four properties to note with respect to progressive/continuous. First, in analogy to the stage-level stative in (21) above, the assertion is restricted to the subinterval made visible by TT in the progressive activity in (32). In other words, we cannot make any claims as to whether or not s/he finished reading the book, as illustrated in (33). Second, (32) provides a phenomenal rather than a structural description.

(32)   Ben gel-diğ-im-de/**saat üç-te** Müge o kitab-ı oku-yor-du.   (progressive)
        1sg arrive-DIK-1sg-LOC/hour 3-LOC M. that book-ACC read-IMPRF-PRF-3sg
        'Müge was reading that book when I arrived/at 3.'

(33)   O kitab-ı oku-yor-du ama **artık** oku-m-uyor /ve **hâlâ** oku-yor.
        that book-ACC read-IMPRF-PRF but anymore read-NEG-IMPRF/and still is
        'S/he was reading that book but not anymore/ and still is .'

Third, just like the stage-level stative in (21), as illustrated in (34), the progressive is compatible with the adverbs tested: a possibility of change, iterativity and divisibility are the properties of (32) as well as (21).

(34)   Müge **hâlâ/yine/o anda** o kitab-ı oku-yor-du.
        M. still/again/at that moment that book-ACC read-IMPRF-PRF-3sg
        'Müge was reading that book still/again/at that moment.'

(35)   Müge o elma-yı ye-di.   count-quantized-singular
        Müge that apple-ACC eat-PRF-3sg
        'Müge ate that apple.'

Fourth, as activities are dynamic STs, they are essentially different from states in terms of mereological structure. While statives do not involve graduality, activities involve dynamism and progression over time.[10] In that respect, activities seem to be more similar to bounded count objects rather to unbounded masses. Therefore, it is argued that progressive activities in (32) arise from quantized reference count objects, as in (35), in contrast to stage-level statives in (21) which arise from quantized reference to mass objects, as in (24). However, this mereological difference between states and activities is not time-relationally relevant. Since the assertion is only restricted to a subinterval made visible by TT, the schema in (19) is argued to represent progressive/continuous as well as stage-level statives.

The above mentioned similarity between stage-level statives and progressives has been widely discussed (cf. Vlach (1981), Smith (1997), Dowty (2002) among others, also cf. Landman (1992), Portner (1998)). The question is whether they belong to the same category. First, the subinterval property is noted to be a property of progressing activities as well (cf. Smith (1997), Dowty (2002)).[11] In Turkish, activities seem to exhibit the subinterval property only with the general imperfective

marker —*(I)yor* and not with the -*mAktA* progressive in (36). This behavior of the -*mAktA* form with the locative marker —*DA* is reminiscent of stage-level statives where the assertion is only limited to that subinterval made visible by TT.

(36)　Bugün oda-sı-nı boy-uyor/*boya-makta ama şu anda balkon-da.
　　　today paint-3sg-ACC paint-IMPRF/paint-mAktA but at the moment balcony-LOC
　　　'He is painting his room today but he is in the balcony right now.'

Second, Vlach (1981:274 et passim, also fn.4) notes that progressive is stative, providing "a temporal frame encompassing something else" (cf. Jespersen (1931:178-180)[12] cited in Vlach (1981:284)). Progressive is similar to stage-level statives except for involving non-stative predicates. On the other hand, Smith (1997: 84-86) argues that progressives and states are of a different order: the former is a viewpoint, while the latter is a situation type.[13] Therefore, in this study, it is suggested that the progressive provides a *stative presentation* of non-stative, non-iterative single events, due to quantized reference.[14]

4.2.2.2. Multiple Event Non-statives

Iterativity was noted above to be the source notion from which habitual/frequentative situations and progressive/continuous ones arise (cf. Bybee et al. (1994)). It also serves to distinguish between habitual/frequentative situations and situations in progress, because the former are made up of multiple individual instances of the same kind of situation, while the latter represent a single situation which continues. In the following two subsections, it will be argued that frequentatives and habituals, which represent multiple instances of the same kind of event iterated over an extended time period, are actually distinct in terms of quantificational reference. Frequentatives involve quantized reference to individual events. Habituals also involve individual events but these multiple instances are considered cumulatively. Note that this seems against Bybee et al. (1994) who do not distinguish between the

two notions. However, the evolution seems to be from iterative through frequentative to habitual (cf. ex. (20) above), suggesting that the more frequently an event is iterated over time, the more likely it is to be considered characteristic of an extended period of time, i.e. habitual.

4.2.2.2.1. Quantized Reference

Like all the subcategories of the imperfective, there are four properties to be considered with respect to frequentatives: (i) quantificational reference, (ii) structural vs. phenomenal description of situations (cf. Goldsmith & Woisetschlaeger (1982:80)), (iii) compatibility with three aspectual adverbs, and (iv) semantic assertion conveyed through TT.

First of all, in this study, it is argued that quantized reference is the distinctive property of frequentatives. When a count object is quantized, the result is a singular, plural or distributive reference to the object, as in (40), (41) and (42) respectively. When an individual, bounded event is quantized, the result is an iterative reference to perfective events.[15] Frequentatives arise from such quantized reference to individual perfective events. The single atomic semelfactive in (37) is comparable to singular reference to a count object, as in (40). When the situation occurs with the repetitive adverb *tekrar* in (38), it is understood that the same kind of event has occurred twice, in analogy to plural reference to a count noun, as in (41). In (39) the explicit frequency adverb denotes that each iterated event holds at a specified frequency distributed over time, i.e. distributive reference to count objects, as in (42a-b).

(37) Quasimodo çan-ı çal-dı.   semelfactive (perfective)
      Q. bell-ACC ring-PRF   (bounded, quantized)
      'Q. rang the bell.'

(38) a. Quasimodo çan-ı **tekrar** çal-dı.   repetitive (perfective)
      Q. bell-ACC again ring-PRF   (bounded, quantized)
      'Q. rang the bell again.'

(39) a.Quasimodo çan-ı **her saat baş-ı** çal-dı/çal-ar-dı/çal-ıyor/çal-ar. (frequentative)
      Q. bell-ACC every hour head-3sg ring-PRF/ring-AOR-PRF/ring-IMPRF/ring-AOR
      'Q. rang/would ring/is ringing/rings the bell every hour.'

(40) Müge bir elma/elma-yı ye-di.   count-quantized-singular
      M. one apple/apple-ACC eat-PRF-3sg
      'M. ate an/the apple.'

(41) Müge bir elma daha/iki elma ye-di.   count-quantized-plural
      M. an apple more/two apple eat-PRF-3sg
      'M. ate another apple/two apples.'

(42) a. Müge **her gün** bir elma ye-r.   count-quantized-distributive
      M. every day an apple eat-AOR-3sg
      'M.eats an apple everyday.'

      b. Çocuk-lar **bir-er** elma ye-di.   count-quantized- distributive
      child-PL one-each apple eat-PRF-3pl
      'The children ate an apple each.'

A comparison between (39) and (42a-b) further illustrates the essential parallelism in quantificational reference between frequentatives and count objects. In (39) the explicit frequency adverb *her saat başı* 'every hour' denotes that each iterated event holds at a specified frequency distributed over time. In (42a) the consumption of apples are distributed over equal intervals of time, i.e. *her gün* 'every day', while in (42b) the objects are distributed over individual subjects, i.e. *birer* 'one each'. In sum, the distributive reading in the frequentative can be observed in the world of objects and vice versa.

Secondly, the frequentative in (39) does not ascribe an inherent property to the subject but merely expresses an observation about the state of the affairs, i.e. a phenomenal description. Thirdly, in (43a-b) below, the inherently momentaneous situations are incompatible with *hâlâ* 'still.' Interestingly enough, in (43c) *hâlâ* has scope over the frequency adverb rather than the event itself. This seems to be the preferred reading, as iterativity and lack of change inherent in *hâlâ* are contradictory notions. *Yine* 'again' gives the semelfactive in (38) a repetitive (for a second time)

reading in (43a), and it is redundant in (43b) as frequentative inherently includes iterativity. As for *o anda* 'at that moment,' it seems to provide temporal reference with the semelfactive in (43a), while it is unacceptable with the frequentative in (43b). Also note the use of the *–Ar/Ir* morpheme in (43b-c) which strengthens the frequentative reading, as opposed to the perfective *–DI* in (43a).

(43) a. Quasimodo çan-ı ***hâlâ/yine/o anda** çal-dı.
     Q. bell-ACC still/again/at that moment ring-PRF
     'Q. rang the bell *still/again/at that moment.'

   b. Quasimodo çan-ı **(?)hâlâ/?yine/*o anda** çal-ar.   (frequentative)
     Q. bell-ACC still/again/at that moment ring-AOR-3sg
     'Q. rings the bell ?still/?again/*at that moment.'

   c. (***Hâlâ**) Quasimodo çan-ı (**hâlâ**) [**her saat başı**] (**hâlâ**) çal-ar.   (frequent.)
     Q. bell-ACC still every hour ring-AOR-3sg
     'It is still hourly that Q. rings the bell.'   (actual reading)
     '*Still Q. rings the bell hourly.'   (intended reading)

The question is whether these facts can be represented time-relationally. It is argued that (44b) below represents frequentatives time-relationally. There are two important properties to note here: First, the wholistic view of individual events is represented by TT/TS, in analogy to the time-relation in perfective viewpoint. Second, there are multiple TTs just like (30) above, repeated here as (44a). Unlike (30/44a), however, the number of (TT/TS)s is made explicit. The adverbials specify the number of individual events that overlap with respective TTs, e.g. specified frequency adverbs as in *haftada bir* 'once a week,' *her saat başı* 'every hour,' etc. or unspecified frequency expressions such as *sık sık* 'frequently,' *hep* 'always,' etc. (cf. Chapter 6 for details).

(44) a. ....[$_{TS}$......TT.....TT....TT...]....   imperfective (individual-level statives)

   b. ....[$_{TS}$....TT/TS....TT/TS......].......   frequentative (quantized (TT/TS)s)

4.2.2.2.2. Cumulative Reference

In Chapter 3, it was shown that Turkish *–Ar/Ir* expresses habituals, generic statements and individual-level states. This similarity in morphological expression suggests a semantic similarity, although these three concepts are of a different order, i.e. habituality is often considered a type of grammatical aspect, state is a situation type, and genericity is a semantic property. Smith (1997:33-36) notes that generic and habitual aspects are derived statives. Bybee et al. (1994:152, exx. 34-35) note that the distinction between habituals, statives and genericity is not obvious, as illustrated by (45a-b) and (46a-b), all of which are statements characterizing an entity atemporally, hence their incompatibility with the frequency adverbials.

(45)   a. Dogs pant to cool off.   (generic)

        b. My dog pants to cool off.   (habitual)

(46)   a. Oyun **hafta-da bir** üç aşama-dan oluş-ur.   (habitual/generic)
        game week-LOC once three phase-ABL consist-AOR
        'The game consists of three phases *once a week.'

        b. Karadeniz **hafta-da bir** dalgalı-dır.   (individual-level stative)
        Black Sea week-LOC once wavy-EVID
        'Black Sea is rough *once a week.'

It is argued that these three notions converge with respect to cumulative reference, just as they converge in terms of the morphological means available to them in Turkish. More specifically, habitual/generic expressions are argued to involve multiple bounded perfective events which are presented cumulatively, as opposed to frequentatives, which involve quantized reference to such multiple individual perfective events.

First, in both (47-48), there is a structural description (cf. Goldsmith & Woisetschlaeger (1982)), i.e. in (47) being late is a characteristic property of Elif, just as flying is presented as the defining property of birds in (48). The habitual in (47) is

characterized by multiple instances of the same kind of situation taking place for "an extended period of time" (cf. Comrie (1976: 28), Bybee et al. (1994:125)), like the generic expression in (48). Note that while *hep* 'always,' which cumulatively refers to all time, is felicitous in (47-48), the specified frequency adverb *haftada bir* 'once a week' is only acceptable in (47).

(47) Elif iş-e **hep/hafta-da bir** geç kal-ır.   (habitual)
      E. work-DAT always/ week-LOC once late remain-AOR-3sg
      'Elif is always late for work/once a week.'

(48) Kuş-lar **hep/*hafta-da bir** uç-ar.   (generic)
      bird-PL always/week-LOC once fly-AOR
      'Birds fly always/*once a week.'

Second, habituality and genericity seem to exhibit a behavior similar to that of individual-level statives, the only difference being that the former notions involve non-statives and are analogous to count objects. The habitual expression in (49a) involves iterativity, although the number of individual repetitions is not adverbially specified.[16] Similarly, (49b) marks the event as the generic property of the subject, making cumulative reference to multiple instances of the same kind of event. This is comparable to cumulative reference to count objects, as illustrated in (50a-b).

(49) a. Quasimodo çan-ı çal-ar, temizle-r.(çal-ıyor/çal-ar-dı.)   (habitual)
      Q. bell-ACC ring-AOR-3sg, clean-AOR-3sg (ring-IMPRF/ring-AOR-PRF
      'Q. rings the bell and cleans it. (also is ringing/used to ring)'

      b. Zangoç-lar çan çal-ar./*çal-ıyor/*çal-ar-dı.   (generic)
      sexton-PL bell ring-AOR/*ring-IMPRF/*ring-AOR-PRF
      'Sextons ring bells.'

(50) a. Müge çok elma ye-r.   count-cumulative (habitual)
      M. a lot apple eat-AOR-3sg
      'M.eats apples a lot.'

      b. Çocuk-lar lolipop ye-r.   count-cumulative (generic)
      child-PL candy eat-AOR-3pl
      'Children eat candy bars.'

Third, in (51a-b) the iterative adverb *yine* 'again' seems to be redundant

because of the iterative nature of the situation expressed. In (51a-b) a subinterval of the entire "extended period of time" cannot be singled out and specified by the adverb *şu anda*. As habituality and genericity involve a structural description of the state of affairs, a possibility of change over time is not expected, as illustrated by the infelicity of *hâlâ* in (51-b).

(51)   a. Quasimodo **?hâlâ/?yine/*şu anda** çan-ı çal-ar, temizle-r. (habitual)
        Q. still/again/at that moment bell-ACC ring-AOR-3sg, clean-AOR-3sg
        'Q. rings the bell and cleans it still/again/at that moment.'

    b. Zangoç-lar ***hâlâ/*yine/*şu anda** çan çal-ar. (generic)
        sexton-PL still/again/at that moment bell ring-AOR
        'Sextons ring bells still/again/at that moment.'

However contradictory it may seem, note the language-dependent variation in terms of the markers *–Ar/Ir* in (51a-b) vs. *–(I)yor* in (52), which is felicitous with all three of the adverbs. This suggests that either our definition of habitual and generic needs to be revised or what *–(I)yor* expresses in (52) is <u>not</u> habituality.

(52)   Quasimodo **hâlâ/yine/şu anda** çan-ı çal-ıyor, temizl-iyor.
    Q. still/again/at that moment bell-ACC ring-IMPRF-3sg, clean-IMPRF-3sg
    'Q. is ringing the bell and cleaning it still/again/at the moment.'

Indeed, Yavaş (1980:134) notes that *–(I)yor* is used to express stage-level predication (temporary nature of a situation/phenomenal description), while *–Ar/Ir* is used for individual-level predication (typical/characteristic features of an entity/structural description).[17] In sum, although both *–(I)yor* and *–Ar/Ir* express iterativity, only *–Ar/Ir* provides a characterizing statement, inherent in individual-level statives, habitual and generic statements.[18] This suggests that iterativity alone is not sufficient to define habituality. In fact, Comrie (1976:27) states that not every repeated situation can be expressed by habitual morphology, as illustrated in the ungrammaticality of (53a) below. In addition, habitual morphology may be used where iterativity is not involved as in (53b). Note, however, that (53b) contains a

stative verb of location, namely *dur-* 'stand.' In that respect, (53b) can be considered on a par with individual-level statives in that they both involve characterizing statements but exclude iterativity.

(53) a. Haylaz çocuk kedi-nin kuyruğ-u-nu **bin kere** çek-ti/* çek-er-di.
      naughty child cat-GEN tail-3sg-ACC thousand times pull-PRF/*pull-AOR-PRF
      'The naughty child pulled/*used to pull the cat's tail a thousand times.'

      b. Araba-nın ruhsat-ı **hep** çanta-m-da dur-ur.   habitual (non-iterative)
      car-GEN license-3sg always bag-1sg-LOC stand-AOR
      'The license of the car is always in my bag.'

Fourth, the assertion in (54a-b) is not limited to any subinterval made visible by TT, as illustrated by the unacceptability of the conjuncts. This suggests that multiple instances of the habitual/generic situation are not singled out/individually quantized and that the structural description of the situation holds true atemporally/at all times, i.e. a "higher" TS is asserted.

(54) a. Quasimodo çan-ı çal-ar, temizle-r ama *artık çal-m-ıyor.(habitual)
      Q. bell-ACC ring-AOR-3sg, clean-AOR-3sg but anymore ring-NEG-IMPRF
      'Q. rings the bell and cleans it but *not anymore.'

      b. Zangoç-lar çan çal-ar ama *artık çal-m-ıyor-lar. (generic)
      sexton-PL bell ring-AOR but anymore ring-NEG-IMPRF-3pl
      'Sextons ring bells but *not anymore.'

Metaphorically speaking, habituality is like a basket of full of apples. In a basket full of apples, there is bound to be space between apples (cf. Vlach (1981)). Yet, the basket is still characterized by being filled with the same kind of object, i.e. a cumulative reference to a count object. In other words, habitual/generic statements denote a higher TS which is filled with individual perfective events (TT/TS)s which have been iterated a sufficient number of times to be considered characteristic of the entire extended period of time.[19] Time-relationally, it is argued that the representation proposed for the frequentative in (44b) above, repeated here as (55a), can be refined to account for habitual and generic statements, provided that the individual (TT/TS)s

are not quantified but considered cumulatively. In other words, in (55b) the higher TS represents a number of vaguely defined prior real events and a number of vaguely defined potential events.[20]

(55)   a. ....[$_{TS}$....**TT/TS....TT/TS......**]...   frequentative (quantized (TT/TS)s)

     b.....[$_{TS}$....**TT/TS....TT/TS......**]......   habitual/generic (cumulative (TT/TS)s)

To conclude the discussion of Turkish imperfectives, as predicted, mereological structure and quantificational reference have proved to be crucial in the subcategories of the imperfective. The basic distinction seems to be that between statives and non-statives. Stage-level predicates vs. individual-level predicates are distinguished in terms of quantized vs. cumulative reference. Non-statives, on the other hand, involve iterativity, i.e. the distinction between a single event vs. multiple instances of the same kind of event, in addition to quantificational reference (cf. **Table 4.4**).

Non-statives (count)	Quantificational reference	*hâlâ*	*tekrar*	*şu anda*	structural description
progressive/continuous (single event)	Quantized (sing.): *bir elma*	yes	yes	yes	no
frequentative (multiple event)	Quantized (pl.): *iki elma* Quant.(distr.): *üçer elma*	no?	no?	no	no
generic/ habitual (multiple event)	Cumulative: *elma(lar)*	no	no	no	yes

Table 4.4: The difference among non-stative imperfectives arising from quantized reference and their compatibility with aspectual adverbs.

In conclusion, Turkish data seem to support our argument that Turkish imperfective situations are distinguished on the basis of mereological structure and quantificational reference. Stage-level statives, progressive/continuous and frequentatives seem to converge in that they all arise from a quantized reference despite their ST-based differences. Individual-level statives, generic statements and habituals, on the other hand, arise from a cumulative reference in spite of their ST-

dependent differences. These differences between subcategories of the imperfective in Turkish can also be represented time-relationally (cf. **Table 4.5**).

IMPERFECTIVE SITUATIONS		
	STATIVE	**NON-STATIVE**
Quantized (singular)	stage-level (single event)	progressive, continuous (single event)
Time-relational representation	.....[$_{TS}$...**TT**.....]....... **singular TT**	.....[$_{TS}$...**TT**.....]....... **singular TT**
Quantized (plural/distributive)	---	frequentative (multiple event)
Time-relational representation		....[$_{TS}$..**TT/TS**..**TT/TS**....].... **plural (TT/TS)s**
Cumulative	indiv.-level, location verbs (single event)	generic/habitual (multiple event)
Time-relational representation	....[$_{TS}$...**TT**..**TT**..]....... **cumulative TTs**	....[$_{TS}$..**TT/TS**..**TT/TS**...].... **cumulative (TT/TS)s**

Table 4.5: Turkish imperfective situations distinguished on the basis of quantificational reference and their respective time-relational representations.

4.3. Extended Interpretations

In the foregoing sections, the expression of perfective and imperfective viewpoints in Turkish has been analyzed. Smith (1997:71) notes a number of language-particular departures from the prototypical perfective and imperfective, constituting marked values or extended interpretations, in our terms. For example, the English Perfect and the Chinese –*guo* are marked perfective viewpoints that focus not only the entire sitution but also have a span beyond the situation. The Chinese experiential –*guo* in (56a) spans the whole situation and the resultant state brought about by a change of state, represented by F+1 in (56b).

(56)   a. Mali shang-ge yue qu-guo Xiang Gang. (Smith (1997:71), ex. (19a))
        Mali last CL month go-GUO Hong Kong.
        'Mali went to Hong Kong last month (no longer there on the same trip).

b. Span of the perfective *–guo*:   **I F F+1**   (Smith (1997:71), ex. 19a)
                                         ///////////

Moreover, the Chinese resultative imperfective *–zhe* is a marked imperfective which has a span not included in the general schema.   The sentence in (57a) is ambiguous.   The planting event may be in progress, or the flower may already have been planted.   The latter reading focuses on the resultant state of a telic event, as schematized in (57b).

(57)   a. Tianli zhong-zhe huar.   (Smith (1997:76), ex. 32b)
       land-in plant-ZHE flower

       b. Resultative imperfective viewpoints: **I...F...////...** (Smith (1997:77), ex. 33)

In a similar vein, in Turkish, the general perfective marker *–DI* (cf. Erguvanlı-Taylan (1997, 2001)) and the general imperfective marker *–(I)yor* (cf. Erguvanlı-Taylan (2001)) seem to instantiate a number of such extended interpretations, corresponding to the perfect.   In addition, the general future marker *-AcAK* (cf. Kerslake (1997)) expresses prospectivity among its other temporal and modal uses (cf. Yavaş (1980)).

The expression of perfect and prospective as extended uses of the perfective and imperfective raises two related questions: (i) why are perfect and prospective expressed via perfective and imperfective viewpoints, instead of being independently grammaticalized? and (ii) are they really viewpoints as in the time-relational approach?   It will be argued that perfect and prospective cannot be considered on a par with the perfective and imperfective, being special constructions rather than independent viewpoints (cf. Smith (1997)).   As will be illustrated below, in the perfect and prospective, either a perfective or imperfective viewpoint is required for the assertion to be conveyed, this being the only way to make the TS or a subpart of it visible and convey the semantic assertion.

As illustrated by (58a-b) and (59a-b), in the perfect and prospective, TT establishes an order relation with TS, and functions as a point of orientation rather than the time of assertion.

(58) a. TT after TS   perfect   (anteriority)
      b. .............TS............TT...........

(59) a. TT before TS   prospective   (posteriority)
      b. .............TT..........TS.............

Recall that visibility is associated with assertion and in the perfective and imperfective, TT makes visible the whole or a part of TS by totally or partially overlapping with it, and thus, is associated with the assertion. However, in the perfect and prospective, TT cannot be associated with assertion because it does not overlap with TS. In fact, the very use of the term TT seems confusing here. The reference interval establishing an order relation with TS and TU should be distinct from TT, i.e. the time of assertion that conveys the viewpoint, and should rather be called a point of orientation (PO).[21] The modified definitions of perfect and prospective are given in (60-61).

(60) a. PO after TS   perfect   (modified definition)
      b. .............TS............PO...........

(61) a. PO before TS   prospective   (modified definition)
      b. .............PO..........TS.............

According to their modified definitions in (60-61), the perfect and prospective do not qualify as independent viewpoints, as there is no time of assertion to make the whole or a part of TS visible. This suggests that the perfect and prospective are dependent on the perfective and imperfective for visibility and semantic assertion. Time-relationally, this amounts to juxtaposing the schemata in (60b) and (61b) on the general perfective and imperfective schemata. The perfective and imperfective viewpoints of perfect and prospective constructions are given in (62a-b) and (63a-b)

respectively.

(62) a. ....TS/TT...........PO...............   perfective viewpoint of perfect

    b. ......[$_{TS}$...TT...].........PO..........   imperfective viewpoint of perfect

(63) a. ....PO.........TS/TT...............   perfective viewpoint of prospective

    b. ....PO.......[$_{TS}$...TT...].........   imperfective viewpoint of prospective

Note that these theoretical possibilities may not all be grammatically realized in Turkish. It will be shown that perfect options in (62a-b) are grammaticalized through the general perfective and imperfective morphology with the crucial contribution of T/A adverbials. On the other hand, the perfective of prospective is neither semantically nor morphologically distinct from the future perfective, even with adverbials. Nor is the imperfective of prospective distinct from the future imperfective. Therefore, it is argued that the prospective is not an independent category in Turkish.

4.3.1. The Perfective of Perfect

Perfect is an intermediary category between tense and aspect, expressing both temporal and aspectual information (cf. Comrie (1976)). Perfect does not provide information directly about the situation but it relates some state to a preceding TS. There is a rich literature on perfect in general (cf. Comrie (1976), Anderson (1982), Klein (1992),[22] Smith (1997),[23] Giorgi & Pianesi (1997),[24] Iatridou et al. (2000),[25] Iatridou (2002)), in English (cf. Bauer (1970), Dillon (1973), Salkie (1989), Michaelis (1994)), as well as in other languages (cf. Youssef (1990), Klein (2000), Musan (2001b), Schmidt (2001) and Portner (2003)), including Turkish (cf. Kornfilt (1997)[26] and Arslan (2001, 2003)).

As was noted in Chapter 3, the general perfective marker –*DI* can also express the perfect, depending on the nature of the adverbs in the sentence. Perfectively

presented Turkish perfect expressions correspond to the three varieties of Existential perfect (EP) distinguished by Iatridou et al. (2000), namely (i) experiential perfect, (ii) perfect of recent past and (iii) perfect of result. In the following subsections we discuss the first two varieties with respect to (i) the morphological means used, (ii) ST-based differences in interpretation, (iii) the semantic assertion conveyed and (iv) the schematic representation of the overlap relation between TS and A. The third variety, namely the perfect of result, will be considered in Chapter 5.

4.3.1.1. Experiential Perfect

In experiential perfect, an informationally closed, perfective situation is understood to have occurred at least once during some time in the past leading to the present (cf. Comrie (1976:58), Smith (1997:187)). In Turkish, this time interval is expressed by adverbials such as *geçen seneden beri* 'since last year' or *iki gündür* 'for the past two days' as in (64) or *şimdiye kadar* 'until now' as in (65) (cf. Chapter 6 for Vector Quantity Adverbials).

The general perfective marker *–DI* and its (indirect evidence) counterpart *–mIş* can be used to express experiential perfect. Being perfective, and thus, bounded, experiential perfect is more felicitous with bounded (telic) situations as in (65a-b), as opposed to unbounded (atelic) ones in (64a-c). The activity in (64b) and the semelfactive in (64c) are only felicitous with quantized reference to individual bounded instances through the obligatory number phrase (cf. the infelicitious (64a') without the number phrase). The stative in (64a) allows the reading 'there have been three instances of my becoming sick.' only with the auxiliary *ol-* which expresses a change of state and not with zero morphology on the non-verbal predicate.

(64)   a.Geçen sene-den beri 3 kere hasta ol-du-m./*hasta-yım. (stative)
        last year-ABL since sick become-PRF-2sg/sick-1sg
        'I have become sick three times since last year.'

a'. *Geçen sene-den beri hasta ol-du-m.

b. Geçen sene-den beri 3 kere bisiklet-e bin-di/-miş.(activity)
last year-ABL three times bicycle-DAT ride-PRF/PERF-3sg
'S/he has ridden a bike three times since last year.'

c. İki gün-dür 3 kere öksür-dü/-müş. (semelfactive)
two day-DIr three times cough-PRF/PERF-3sg
'S/he has coughed three times for the past two days.'

(65)   a. Ali bu yarış-ı (şimdiye kadar) 3 kere kazan-dı/-mış. (achievement)
Ali this race-ACC (until now) three times win-PRF/-PERF-3sg
'Ali has won this race three times (so far).'
'Ali won this race.' (past perfective reading without the number phrase)

b. Ali bu kitab-ı (şimdiye kadar) 3 kere oku-du/-muş. (accomplishment)
Ali this book-ACC (until now) three times read-PRF/PERF-3sg
'Ali has read this book three times (so far).'
'Ali read this book.' (past perfective reading without the number phrase)

In contrast, the perfective (telic) situations in (65a-b) do not undergo any ST-shift and are understood to have recurred three times within an adverbial interval starting in the past leading to the present. The Left Boundary (LB) of A is not specified, but world knowledge tells us that the readings must have occurred within Ali's lifetime: the adverb *şimdiye kadar* 'until now' in (65a) expresses the right boundary (RB). As can be seen in (64a-c) and (65a-b), the number phrase is obligatory for the experiential perfect reading. Otherwise, the sentences would get a past perfective reading. This is also related to the implication of experiential perfect that the subject has had a certain experience at least once, as illustrated in (66) and (67) below (cf. Iatridou et al. (1999:5), Smith's (1997) participant property in § 5.1.2.2.).

(66)   a. Sen-in hiç Barbie bebeğ-in ol-du mu?
2sg-GEN ever Barbie doll-2sg be-PRF q. part.
'Have you ever had (the experience of possessing) a Barbie doll?'

b. Ben-im ol-du, hem de pek çok.
1sg-GEN be-PRF, and part. a lot
'I've had a Barbie doll, in fact a lot of them.'

The oddness of the expression in (67a) is due to the co-occurrence of the adverb *hiç* 'ever' and death, a situation that can occur only once. As the *hiç* expression is implicative of prospective possibilities, the iteration of the experience of death is contradictory. Note, however, that without the *hiç* in (67b) the perfect meaning is lost, and the sentence now has a past perfective reading, like the ones in (65a-b) above.[27]

(67)   a. ??Siz-in **hiç** baba-nız öl-dü mü? Ben-im **bir kere** öl-dü, kör ol-du-m.
(Cemal Süreya)
2pl-GEN ever father-2pl die-PRF q. part 1sg-GEN once die-PRF, blind be-PRF-1sg
'Have you ever had your father dead? Mine has died once, I became blind.'
(literal)

b. ??Siz-in baba-nız öl-dü mü?
2pl-GEN father-2pl die-PRF q. part
'??Did your father die?

Time-relationally, the experiential perfect seems to be the combination of (68a-c), schematized in (69a): (i) TS precedes the PO, as in (68a), (ii) TS is perfectively presented, i.e. TT totally overlaps with TS as in (68b), and (iii) TS holds at least once within A, as in (68c). Note that (69a) is the same as predicted in (62a) above, except for the relation between A and TS. The obligatory number phrases reflecting multiple instances of perfective events (TS/TT)s can be schematized as in (69b). Note that this is analogous to the quantized reference in the frequentatives (cf. § 4.2.) except for the special relation between A and TS.

(68)   a. ............TS..............PO........................   (perfect: PO after TS)

b. ....TT/TS....................................   (perfective)

c. ....[A_____TS____].............   (TS in A)

(69)   a. ......[A_____TS/TT_____PO].............   (experiential perfect)

b. ......[A__TS/TT____TS/TT__TS/TT____PO].............

4.3.1.2. Perfect of Recent Past

In the perfect of recent past, there is a closed, perfective TS prior to a point of orientation (PO), expressed in Turkish by the perfective marker –*DI* and its modally distinct counterpart –*mIş*, like the experiential perfect. However, the perfect of recent past meaning arises only with adverbs of recency such as *henüz, daha yeni, az önce* 'just, a while ago.' With adverbs indicating (past) temporal location, –*DI* and –*mIş* get a (past) perfective reading, as illustrated by (70a'). This supports Comrie's (1976:60) view that a perfect of recent past meaning is triggered by adverbs of recency such as *just, recently*, etc. In effect, perfect of recent past indicates the temporal proximity of an anterior TS, as suggested by the term itself.[28]

(70)   a. Otobüs **az önce/daha yeni/henüz** gel-di/-miş. (achievement)
        bus a short while ago/recently/just arrive-PRF/PERF-3sg
        'The bus has just arrived.'

        a'. Otobüs **dün saat 4'te** gel-di/-miş.
        bus yesterday hour four-LOC arrive-PRF/PERF-3sg
        'The bus (reportedly) arrived yesterday at 4 o'clock.'

        b. Hasta **az önce/daha yeni/henüz** öksür-dü/-müş. (semelfactive)
        patient a short while ago/recently/just cough-PRF/PERF-3sg
        'The patient has just coughed.'

        c. Motor **az önce/daha yeni/henüz** çalış-tı/-mış. (activity)
        engine a short while ago/recently/just work-PRF/PERF-3sg
        'The engine has just started to work.'

Time-relationally, the perfect of recent past is similar to experiential perfect in combining the general perfect schema in (68a) and the perfective in (68b). However, it differs from experiential perfect in terms of the overlap relation between A and TS, which seems crucially dependent on durativity.

(71)   a. Otobüs **az önce/?daha yeni/henüz** burada-ydı. (stative)
        bus a short while ago/recently/just here-DI-3sg
        'The bus has just been here.'

b. Havuz-u **az önce/daha yeni/henüz** doldur-du/-muş. (accomplishment)
pool-ACC a short while ago/recently/just fill-PRF/PERF-1sg
'S/he has just filled the pool.'

With the stative in (71a) and the accomplishment in (71b), the situation is understood to have been completed, i.e. the bus is no longer there and the pool is full. This means that the final endpoint of TS overlaps with the LB of A, as schematized in (72a). Note that the adverbial interval stretches until the PO, i.e. TU in (70-71). This is a case of partial overlap (intersection) where the final endpoint of TS overlaps with the LB of an adverbial interval.

(72)   a. ....[TS $_i$____[$_{A\,LB}$/TS $_f$]___]PO......(durative STs: TS intersects with A)

       b. ....[$_{A\,LB}$/TS_____]PO................ (non-durative STs: TS in A)

On the other hand, the non-durative achievement in (70a) and the semelfactive in (70b) totally overlap with the LB of A. The activity in (70c) gets an ingressive reading, although it is implicit that the situation continues until PO. In that respect, (70c) is non-durative/instantaneous like (70a-b), and thus, totally overlaps with the LB of A, as schematized in (72b). In short, perfect of recent past can be schematized for statives and accomplishments as in (73a) and for semelfactives, achivements and shifted activities as in (73b).

(73)   a. ..[(TS/TT)$_i$___[A$_{LB}$/(TS/TT)$_f$]__]PO... (Perf. of recent past: durative STs)

       b. ...[A$_{LB}$/(TS/TT)____]PO............. (Perf. of recent past: non-durative STs)

4.3.2. The Perfective of Prospective

The –*mAK üzere* is a specialized periphrastic form to express present prospective, without requiring adverbs of (future) proximity, as illustrated in the infelicity of such adverbs in (74).

(74)   Otobüs ***az sonra/??şimdi/*hemen/*iki dakika içinde** gel-mek üzere.
       bus in a short while/now/soon/two minute within arrive-INF about
       'The bus is about to arrive.'

The general future marker *–(y)AcAK* co-occurring with adverbs of (future-oriented) temporal closeness such as *az sonra* 'soon,' *şimdi* 'right now,' *hemen* 'immediately,' etc. in (75a-b) and (76a-c) can express future perfective and marginally present prospective. With future temporal location adverbs, however, only a future perfective reading is obtained as in (75a').

(75) a. Otobüs **az sonra/şimdi/hemen** gel-ecek. (achievement)
bus in a short while/now/soon arrive-FUT-3sg
'The bus is about to arrive//will soon arrive.'

a'. Otobüs **yarın saat 4'te** gel-ecek.
bus tomorrow hour four-LOC arrive-FUT-3sg
'The bus will arrive tomorrow at 4 o'clock.'

b. Hasta **az sonra/şimdi/hemen** öksür-ecek. (semelfactive)
patient in a short while/now/soon cough-FUT-3sg
'The patient is about to cough//will soon cough.'

(76) a. Motor **az sonra/şimdi/hemen** çalış-acak. (activity)
engine in a short while/now/soon work-FUT-3sg
'The engine is about to start working//will soon start to work.'

b. Otobüs **az sonra/?şimdi/?hemen** burada (ol-acak). (stative)
bus in a short while/now/soon here be-FUT-3sg
'The bus will soon be here.'

c. Havuz-u **az sonra/şimdi/hemen** doldur-acak. (accomplishment)
pool-ACC in a short while/now/soon fill-FUT
'S/he is about to start filling//will soon start filling the pool.'

All the prospective and perfective situations in (74-76) are unrealized at PO and perfectively presented. Therefore, present prospective does not seem to be distinct from future perfective, as suggested by the semantic and morphological neutralization in (75a-b) and (76a-c). If so, time-relationally, present prospective is expected to combine the general prospective schema in (77a) and the perfective in (77b). Curiously, the perfective of prospective in (77c) is not distinct from the future perfective in (78), if TU is taken as the PO, which is indeed the case in present prospective.

(77) a. .............PO.........TS............................. (prospective: PO before TS)

b. ....TS/TT.................................. (perfective)

c. ....PO.................TS/TT................ (perfective of prospective)

(78) ....TU..................TS/TT.......... future perfective

As for the overlap relation between A and TS, in (75a-b), the instantaneous achievement in (75a) and the semelfactive in (75b) overlap with the RB of A, as illustrated in (79a). As for the activity in (76a), the stative in (76b), and the accomplishment in (76c), there is focus on the initial endpoint of the situation, which coincides with the RB of A, as schematized in (79b). The remaining temporal span of these situations are only implicit. In short, present prospective and future perfective are not distinct time-relationally, but for the adverbial span which starts from the PO/TU and stretches until the initial endpoint of durative situations and non-durative (single-stage) situations themselves.

(79) a. ...TU/PO[A_{LB}_____A_{RB}/TS]............ (non-durative STs: TS in A)

b. ...TU/PO[A_{LB}___A_{RB}/[TS $_i$]___TS_f]... (durative STs: TS intersects with A)

4.3.3. The Imperfective of Perfect

In the universal perfect (henceforth UP) (cf. Iatridou et al. (2000)), an informationally open, imperfective situation is understood to hold *throughout* a reference interval extending from a prior PO to a present PO, i.e. TU. This has been called the Extended Now interpretation of universal/continuative perfect or perfect of persistent situation (cf. Smith (1997), Klein (1992), Iatridou et al. (2000), Iatridou (2002) among others).

In Turkish, UP is expressed by the general imperfective marker –*(I)yor* or the progressive –*mAktA* on verbal predicates and zero morphology on non-verbal predicates, as illustrated in (80a-b) (cf. Erguvanlı-Taylan (2001), Kornfilt (1997)).

The adverbial reference interval, which Iatridou et al. (2000:14-18) call the Perfect Time Span (PTS), is crucial in the UP reading. For example, in (80b), the LB, i.e. *2003*, of the postpositional *–DAn beri* 'since' adverb overlaps with the initial endpoint of the TS and its RB overlaps with TU. TS holds throughout this adverbial span, including both the left and right boundaries. In fact, TU, which overlaps with the RB of A, is also included by assertion, as illustrated by the ungrammaticality of the conjuncts (denoting that TS does not hold at TU) in (80a-b) (cf. Iatridou et al. (2000)). This suggests that UP semantically behaves like the present tense. Comrie (1976:60) reports a number of languages that employ present tense marking for UP. Turkish seems to be one of those languages, looking at the use of zero marking for both the stative UP in (80b) and the present stative in (80c). However, Turkish is different from those languages in morphologically distinguishing between the EP and UP readings of statives (cf. the EP stative in (64a) vs. the UP stative in (80b)).[29]

(80) a. **Üç yıl-dır** çalış-ıyor-um/çalış-makta-yım ama *artık çalış-m-ıyor-um.
       three year-DIr work-IMPRF/~-mAktA-1sg but any longer work-NEG-IMPRF-1sg
       'I've been working for three years but *I'm not working any more.'

      b. **2003'ten beri** hasta-yım ama *şimdi/??artık iyi-yim.
       2003-ABL since sick-1sg but *now/??from now on fine-1sg
       'I have been sick since 2003 but *I'm fine now.'

      c. Hasta-yım.
       sick-1sg
       'I'm sick.'

As noted by Iatridou et al. (2000:4), unboundedness (atelicity) is the feature required for UP: UP readings arise only with a stative predicate or a progressive situation. Indeed, the stage-level state in (81a) and the activity in (81b) are felicitous. On the other hand, the achievement in (82b) is ungrammatical and the accomplishment in (82a) is shifted into a derived preliminary activity. Similarly, the atelic semelfactive in (82c) obtains a multiple-event activity reading, suggesting that

not only atelicity but also durativity is significant in UP.

(81) a. **2003'ten beri** arkadaş-ız/*kısa boylu-yuz. (stative)
2003-ABL since friend-1pl/*short-1pl
'We've been friends/*short since 2003.'

b. **2003'ten beri her Cumartesi** görüş-üyor-uz./görüş-mekte-yiz. (activity)
2003-ABL since every saturday meet-IMPRF-1pl/meet-mAktA-1pl
'Since 2003, we've seen each other every Saturday.'

(82) a. **2003'ten beri** o kazağ-ı ör-üyor-um. (accomplishment→ activity)
2003-ABL since that pullover knit-IMPRF-1sg
'I have been knitting that pullover since 2003.' (shifted activity reading)

b. *Tren **2003'ten beri** Roma'ya var-ıyor.   (*achievement)
train 2003-ABL since Rome-DAT arrive-IMPRF-3sg
'*The train has been arriving in Rome since 2003.'

c. **2003'ten beri** çan-ı çal-ıyor-um. (semelfactive → activity)
2003-ABL since bell-ACC ring-IMPRF-1sg
'I have been ringing the bell since 2003.'

As was predicted in (62b) above, time-relationally, the UP in (84a) is a combination of three schemata: (i) There is a PO posterior to TS, i.e. perfect, as in (83a), (ii) only a subpart of TS is made visible by TT, i.e. imperfective, as in (83b) and (iii) TS totally overlaps with the adverbial interval, as in (83c). (84b) represents multiple instances of events as in (81b).

(83) a. ............TS.............PO......................   (perfect: PO after TS)

b. ....[$_{TS}$...........TT..........]................   (imperfective: TT in TS)

c. ....[$_{A/TS}$_____]....................   (TS totally overlaps with A)

(84) a. ......[$_{A/TS}$____TT___]........PO..........   imperfective viewpoint of perfect

b.......[$_A$__TS/TT___TS/TT___TS/TT___PO]....... (iterative)

4.3.4. The Imperfective of Prospective

In (63b) above, repeated here as (86a), the imperfective viewpoint of prospective was presented as a theoretical possibility. It is argued that imperfective of prospective is not distinct from the future imperfective morphologically or

semantically. Time-relationally, this possibility is the combination of (i) a TS posterior to PO, i.e. prospective in (85a), and (ii) a TS only a subpart of which is made visible by TT, i.e. imperfective, as in (85b). Indeed, this is not only the theoretical imperfective of prospective in (86a), but also the future imperfective schema in (86b), the only difference being that in (86b) the PO is TU.

(85)   a. .............PO...............TS............   prospective

       b. ....[$_{TS}$.........TT.........]......   imperfective

(86)   a. ....PO.......[$_{TS}$...TT...]..........   imperfective viewpoint of prospective

       b. ....TU..........[$_{TS}$....TT...].....   future imperfective

In (87a), the periphrastic future imperfective construction *–(I)yor ol-* presents an imperfective view of a situation which will take place posterior to TU/PO, as schematized in (87a') and (86b). In the anterior prospective in (87b), the PO is anterior to TS. In (87b), the *–AcAK-DI* structure expresses a situation expected to take place at a time posterior to an anterior PO, as in (87b'). As for the *–(I)yor ol-AcAK-DI* periphrasis in (87c), there is an anterior PO (PO1) posterior to which an imperfective situation was expected to obtain at a PO posterior to TU, i.e. (PO2). This is the anterior imperfective of prospective, as schematized in (87c'). Note that all these POs in (87b'-c') are introduced by adverbs of temporal location.

(87)   a. Sene-ye bugün havuz-da yüz-üyor ol-acağ-ım. (future imperfective)
       year-DAT today pool-LOC swim-IMPRF be-FUT-1sg
       'Next year today I will be swimming in the pool.'

       a'. ....TU..............[$_{TS}$...TT.....]..................

       b. (Tez bit-se-ydi) bugün tatil-e çık-acak-tım. ((anterior) prospective)
       thesis finish-COND-PRF today holiday-DAT go-FUT-PRF-1sg
       'If the thesis had been completed, I would go on holiday today.'

       b'. ....PO1.........TS/TU.............

c. Yarın da havuz-da yüz-üyor ol-acak-tım. ((anterior) imperf. prospective)
tomorrow part. pool-LOC swim-IMPRF be-FUT-PRF-1sg
'And I would be swimming in the pool tomorrow.'

c'. .....PO1.........TU.............[$_{TS}$/PO2.....TT.....]..................

The data suggest that (i) there is no difference between imperfective of prospective and future imperfective morphologically or time-relationally but there is a terminological discrepancy, (ii) prospective is not an independent viewpoint in Turkish and (iii) there are fewer means of grammatical expression used for posterior (future) aspectual distinctions in comparison to anterior distinctions. This supports the observation of Comrie (1976:64) that there is an asymmetry in terms of grammatical means of expression available to past-oriented aspectual distinctions than to those future-oriented ones.

4.4. Discussion

The foregoing chapter has focused on the expression of perfective and imperfective viewpoints in Turkish and their extended interpretations, namely perfect and prospective. It has been shown that viewpoints are closely related to the mereological structure of situations and quantificational reference. The imperfective seems to be more affected by mereological structure as it presents an open view of situations. This open view is achieved by means of TT which overlaps with a subpart of a situation and makes it visible for assertion. This is where time-relations and mereological structure converge. Time-relations between TS, TT and A have implications for (i) the definition of viewpoints, (ii) the semantic assertion conveyed in the sentence, and (iii) the semantic distinctions that can be expressed by viewpoint morphology.

As was mentioned in Chapter 3, there are two kinds of relations between two intervals, i.e. overlap and order. In the (unmodified) time-relational approach,

perfective and imperfective arise from an overlap relation between TS and TT, while perfect and prospective arise from an order relation between TS and TT. Consequently, there are two distinct functions of TT arising from its relation with TS. In the perfective and imperfective, it establishes an overlap relation with TS and is associated with the semantic assertion. On the other hand, in the perfect and prospective, it does not overlap with TS and cannot be associated with assertion. Therefore, it functions like a point of orientation rather than the time of assertion. In fact, this is the basic dichotomy between viewpoints (perfective and imperfective) vs. their extended interpretations (perfect and prospective).

Three major modifications have been proposed in the time-relational approach: (i) the general imperfective time-relational schema has been refined to represent the subcategories of the imperfective, (ii) a general prototypical definition of the perfective involving total overlap of TT with TS has been proposed to replace a number of language-specific definitions (cf. Chapter 3), and (iii) perfect and prospective have been redefined in terms an order relation between PO and TS rather than between TT and TS.

Firstly, one of the shortcomings of the time-relational approach was observed to be its inability to account for notions such as iterative, frequentative, habitual, etc. (cf. Chapter 3). It has been illustrated that the subcategories of the imperfective in Turkish arise from (i) mereological structure, (ii) iterativity and (iii) quantificational reference. The general imperfective time-relational schema has been refined to capture such differences and the above mentioned notions.

Secondly, in the perfective and imperfective viewpoints, the subpart of TS that TT overlaps with is made visible and asserted. Accordingly, in the perfective, TT totally overlaps with TS and the whole situation is included in the assertion. This is in

line with Comrie's (1976) classical definition of the perfective with no explicit reference to internal temporal constituency. On the other hand, in the imperfective, TT partially overlaps with TS and only that subpart of the situation is included in the assertion. This is the time-relational representation of Comrie's (1976) definition of the imperfective involving explicit reference to internal temporal constituency. In short, Smith's (1997) concept of visibility in cooperation with the overlap relation in the time-relational approach accounts for the basic aspectual opposition in language, due to the definition of TT as the time of assertion.

Thirdly, in the perfect and prospective, the reference interval that establishes an order relation with TS has been illustrated to be PO rather than TT.[30] In order for the assertion to be conveyed, the whole or a subpart of the situation must be made visible. This can only be achieved by means of a TT that totally or partially overlaps with TS. In other words, for the assertion to be conveyed in the perfect and prospective, they must be perfectively or imperfectively presented. Hence, they appear as extended interpretations of the perfective and the imperfective, rather than being independent viewpoints. In short, prospective and perfect are special constructions which involve two reference intervals: (i) the time of assertion (TT) due to "superimposed" perfective and imperfective viewpoints and (ii) the point of orientation (PO).[31]

Finally, with respect to the time-relations between TS and A, both total and partial overlap is observed. In the imperfective Universal Perfect, there is a total overlap relation between A and TS, as TS holds throughout A. On the other hand, in the perfective Existential Perfect, there is partial overlap, as TS is contained within A. The particular partial overlap relation between A and TS is dependent on the durativity of the ST. In prospective constructions, on the other hand, only a partial

overlap relation is established, which highly reduces the aspectual distinctions expressable by prospective constructions (cf. **Table 4.6** below). In fact, the present prospective does not seem to be distinct from the future perfective, and the imperfective of prospective is not morphologically distinguished from the future imperfective.

OVERLAP RELATIONS BETWEEN A AND TS IN PERFECT AND PROSPECTIVE	
Total overlap (equality)	Universal perfect: **TS overlaps with A** (TS/A)
Partial overlap (proper inclusion)	Experiential perfect: **TS in A** Perfect of recent past: –dur ST: **TS in A** (TS/A_{LB}) Present prospective: -dur ST: **TS in A** (TS/A_{RB})
Partial overlap (inclusion)	Perfect of recent past: +dur ST: **TS intersects with A** (TS$_f$/A_{LB}) Present prospective: +dur ST: **TS intersects with A** (TS$_i$/A_{RB})

Table 4.6: Overlap relations between A and TS in perfect and prospective constructions

CHAPTER FIVE

SITUATION TYPE IN TURKISH

5.0. Introduction

The present chapter deals with the expression of situation type (ST) in Turkish, with special focus on three major issues: (i) the relation of STs with objects and the notion of change of state (cf. § 5.1.), (ii) the interaction of STs with viewpoint morphology and T/A adverbs (cf. § 5.2., § 5.3.) and (iii) an informal proposal by Smith (1997:36) suggesting a reclassification of STs in terms of a feature [Bounded]. The first issue relates to the contribution of NP complements and Case in the expression of completion/telicity in Turkish. In addition, the interaction of completion with duration seems to contribute to the expression of the notion of change of state through lexical and/or grammatical means. The second issue is concerned with the interpreted ST shifts that arise in sentences where STs, viewpoints and adverbials seem to have clashing temporal/aspectual feature values. Finally, the third issue seems to have significant theoretical and empirical implications, especially in terms of the three parameter approach to aspect proposed in the present study and seems to support our arguments that (i) boundedness is the prototypical property of aspect and that (ii) boundedness is independently expressed by each of the three parameters.

For Smith (1997), situation type is defined as an idealized class of situations distinguished in terms of three temporal/aspectual features, namely (i) dynamism, (ii) duration and (iii) telicity, based on human cognitive and perceptual capabilities. Basic-level ST categories are simple and complete, representing prototypical situations. Derived-level[1] STs either focus part of a situation or involve multiple instances of other situations (cf. Smith (1997:22), hence, are departures from the

unmarked prototypes. Smith (1997) distinguishes five basic-level STs, namely states, activities, semelfactives, achievements and accomplishments, as schematized[2] in (1a-c) and (2a-b) below.

(1) a. State $(I)\_\_\_(F)$ $[- dyn, - tel, + dur]$
     a'. <uzunboylu ol->   (individual-level state)
     'be tall'
     a''. <burada ol->   (stage-level state)
     'be here'

     b. Activity $I \text{--------} F_{arb}$ $[+ dyn, - tel, + dur]$
     b'. <yüz->
     'swim'

     c. Semelfactive   E $[+ dyn, - tel, - dur]$
     c'. <öksür->
     'cough'

(2) a. Achievement   E R $[+ dyn, + tel, - dur]$
     a'. <kara-yı gör->
     'spot the land'

     b. Accomplishment $I \text{-------} F_{nat} R$ $[+ dyn, + tel, + dur]$
     b'. <bir kazak ör->
     'knit a pullover'

States as in (1a-a'') are non-dynamic, durative and atelic and are distinguished as stage-level and individual-level statives (cf. Carlson (2002)). Activities, as in (1b), are atelic STs with an arbitrary terminal point. Semelfactive, as in (1c), is an atelic ST which consists of a single stage (cf. Smith (1997:29)). Achievements, as in (2a), are telic STs that consist of a change of state and a result. Accomplishments, as in (2b), are telic STs that bring together a process, a change of state and a result.

Smith (1997:35-6) suggests reclassifying STs with respect to *boundedness*, a feature arising from dynamism and mereological structure. Instead of the feature [+/- telic], she suggests a general feature [Bounded] that represents three types of bounds: (i) intrinsic, (ii) implicit and (iii) independent (explicit). As will be illustrated below, the intrinsic bound refers to the natural endpoint/set terminal point

in telic STs, the implicit bound refers to the effect of perfective morphology in a sentence, and the independent bound is any bound imposed by adverbials. In the present chapter, this informal proposal left unexplored by Smith (1997) will be elaborated on in an attempt to consider the theoretical and empirical implications of boundedness for aspect.

The three types of bounds, namely intrinsic, implicit and independent, are exemplified for Turkish in (3-6) below. The individual-level state in (3a) is intrinsically unbounded, whereas telic events, namely the achievement in (5) and the accomplishment in (6), are intrinsically bounded. Note that the intrinsic bound refers to the natural endpoint of the situation, i.e. the set terminal point. In Turkish, an implicit bound is imposed on situations by the perfective marker –DI, as in (4-6). As for independent bounds, adverbial expressions serve to temporally bound[3] the stage-level state in (3b), the atelic activity in (4b) and the achievement in (5).

(3)   a. Arda yeşil gözlü.   (individual-level state)
        Arda green eyed-3sg   (unbounded)
        'Arda has green eyes.'

        b. Arda **şu anda** oda-sı-nda.   (stage-level state)
        Arda at the moment room-3sg-LOC   (independent bound)
        'Arda is in his room at the moment.'

(4)   a. Koş-tu-m.   (activity)
        run-PRF-1sg   (implicit bound)
        'I ran.'

        b. **Bu sabah 7 ile 8 arası** koş-tu-m.   (activity)
        this morning 7 and 8 between run-PRF-1sg (implicit + independent bound)
        'I ran this morning from 7 to 8.'

(5)   Vazo-yu **demin** kır-dı-m.   (achievement)
        vase-CC a while ago break-PRF-1sg (implicit +independent + intrinsic b.)
        'I broke the vase a while ago.'

(6)   Selimiye'yi Mimar Sinan inşa et-ti.   (accomplishment)
        Selimiye-ACC Architect S.build-PRF-3sg   (implicit + intrinsic bound)
        'Architect Sinan built the Selimiye Mosque.'

Note that these bounds are independent from one another. In (4b) the activity

is presented as having both an independent adverbial bound and an implicit bound with the perfective. The achievement in (5) has all three bounds: (i) it is telic, i.e. intrinsically bounded, (ii) it is implicitly bounded by the perfective and (iii) it has independent temporal bounds due to the adverb.[4] However, the three types of bounds are distinct in terms of subjectivity. A speaker may choose to impose implicit and/or independent bounds on an otherwise unbounded situation, whereas the intrinsic bound is objective, as it is the distinctive property of achievements and accomplishments.

The major theoretical advantage of the boundedness feature is the possibility to account for three independent pieces of aspectual information under the same unifying notion. It is argued that intrinsic, implicit and independent bounds each represent one of the three parameters of aspect, namely situation type, viewpoint aspect and adverbials respectively (cf. **Table 5.1** below).

ASPECT AS A LINGUISTIC INSTANTIATION OF BOUNDEDNESS					
LEXICAL EXPRESSION (COVERT)		GRAMMATICAL EXPRESSION		LEXICAL EXPRESSION (OVERT)	
SITUATION TYPE		VIEWPOINT		ADVERBIALS	
intrinsic bounds		implicit bounds		independent bounds	
[+bounded]	[-bounded]	[+bounded]	[-bounded]	[+bounded]	[-bounded]
achievement accomplishment	state activity semelfactive[5]	perfective	imperfective	in an hour	for an hour

Table 5.1: The three types of bounds corresponding to three parameters of aspect

The following sections in § 5.1., § 5.2. and § 5.3. below investigate the expression of intrinsic, implicit and independent bounds in Turkish respectively. If indeed the argument is empirically correct, this will provide support for (i) the three-parameter approach in the present study and (ii) the argument that boundedness is the

prototypical feature of aspect expressed independently in terms of the three parameters.

5.1. Situation Type and Objects: Intrinsic Bounds

The intrinsic bound corresponds to the natural endpoint/set terminal point in achievements and accomplishments, i.e. telicity. Smith (1997) further distinguishes between achievements and accomplishments using the notion of non-detachability. This is the relation between the process and change of state involved in an accomplishment, in contrast to an achievement. The ST of a sentence is determined at the verb constellation level, which includes not only the verb but also its arguments. This brings the world of objects into aspectual interpretation.

In the following subsections, two issues relating to intrinsic bounds will be considered with respect to Turkish: (i) the contribution of NPs and Case in the expression of intrinsic bounds (cf. § 5.1.1) and (ii) the grammatical and/or lexical expression of the relation among a process, a change of state and a result (cf. § 5.1.2). Three kinds of change of state will be distinguished: (i) result-oriented, (ii) process-oriented and (iii) both result and process-oriented (cf. § 5.1.2.). While the first two kinds are expressed covertly, derivationally or periphrastically, the third kind is grammaticalized in the perfect of result, which is a variety of Existential Perfect (EP) (cf. Iatridou et al. (2000), § 4.3). It will be observed that the complex meaning of the perfect of result which brings together process and result also has implications for the participant(s) involved in the situation (cf. § 5.1.2.1., § 5.1.2.2.)

5.1.1. Completion/Telicity

Completion is the total affectedness of the object upon reaching the set terminal point/natural endpoint in achievements and accomplishments (cf. Krifka (1989), Smith (1997)). Note that completion, as a term, seems to emphasize the measuring arguments (cf. Tenny (1994, 2000)) rather than NPs expressing

direction/location. Smith's (1997) telicity, on the other hand, includes all internal arguments of the verb at the verb constellation level, despite language-specific variation in its expression.[6] In this study, the terms completion and telicity are used interchangeably. There are a number of other terms proposed for completion/telicity such as delimitedness (cf. Tenny (1994, 2000)), terminativity (cf. Verkuyl (1996)), set terminal point (cf. Krifka (1989)) and *Terminalität* 'terminality' (cf. Johanson (1971,1994)).

Telicity/completion is related to specificity and quantification as well (cf. Krifka (1989)). Telic events, i.e. accomplishments and achievements, are specific and quantized, whereas activities and states are cumulative (cf. Smith (1997:20)). Case in Turkish (cf. Nilsson (1984, 1985)) is a crucial factor in the expression of completion, as it is directly related to definiteness and specificity. The five cases which contribute to the expression of completion are Nominative (NP-Ø), Accusative (NP-*(y)I*), Dative (NP-*(y)A*), Locative (NP-*DA*) and Ablative (NP-*DAn*), as illustrated in (7-9) below. The Nominative direct object NP *kitap* 'book' in (7) receives a non-definite, non-referential reading, as it is incorporated into the verb. Thus, there is a cumulative/atelic activity reading with no mention of a specific object that is directly affected.

(7)   Gül kitap oku-du.   (Direct object) NP-NOM, activity
        Gül book-Ø read-PRF.   (cumulative)
        'Gül read/did book-reading.'

Both NPs in (8a-b) have a definite, specific reading. However, the Accusative in (8a) triggers a quantized/telic accomplishment reading with a totally affected object. On the other hand, the Ablative (Partitive) in (8b) yields a cumulative/atelic activity reading with a partially affected object.

(8)   a Gül kitab-ı oku-du.   NP-ACC, accomplishment
          Gül book-ACC read-PRF.   (quant., totally affected obj.)
          'Gül read the book.'

b. Gül kitap-tan oku-du, alıntı-lar yap-tı.   NP-ABL, activity
G. book-ABL read-PRF. quote-PL make-PRF.(quant., partially affected obj.)
'Gül read from the book, making quotations.'

The definite and specific NPs in (9a-b) denoting direction and location are expressed by the Dative and the Locative respectively. The Dative NP in (9a) involves direction towards an object, and the activity predicate *otur-* receives a quantized/telic change of state reading with focus on its initial endpoint, i.e. ingressive. The Locative NP in (9b) indicates the position at which the cumulative/atelic activity takes place.

(9)   a. Gül koltuğ-a otur-du.   NP-DAT, activity (ingressive)
         Gül armchair-DAT sit-PRF.   (direction)
         'Gül sat down in the armchair.'

       b. Gül koltuk-ta otur-du.   NP-LOC, activity
         Gül armchair-LOC sit-PRF.   (location)
         'Gül sat in the armchair.'

Note that the direction/location NPs in (9a-b) are different from the measuring NPs in (7) and (8a-b), which involve gradual measuring out of the event (cf. Tenny (1994), Krifka (1989)). This difference is further illustrated by (10a-b) and (11a-b) below.

(10)   a. örgü ör-   (cumulative NP)   (atelic) activity
         'knit'

       b. bir kazak ör-   (quantized NP)   (telic) accomplishment
         'knit a pullover'

(11)   a. sahil-e doğru ilerle-   (direction)   (atelic) activity
         shore-DAT towards move-
         'move towards the shore'

       b. sahil-e var-   (location)   (telic) achievement
         shore-DAT arrive
         'reach the shore'

The (singular) quantized NP in (10b) gradually measures out the event and yields an accomplishment reading in the otherwise cumulative activity in (10a) (cf. Tenny (1994)). On the other hand, the Dative NP in (11a) is the indicator of a

potential terminal point, i.e. the location argument towards which the activity is directed. The same NP in (11b) denotes an actual terminal point in (11b), i.e. the actual position where the achievement is realized (cf. Dahl (1981:84)). This is due to verbs such as *ilerle-* vs. *var-* that indicate telicity independently of aspectual morphology, case or adverbs (Smith (1997:48) calls them "super-lexical" morphemes).

In sum, the common property of all situations in (7-11) is that they are bounded in time, i.e. they have a terminal point. The atelic situations in (7), (8b), (9b), (10a) and (11a) end at an arbitrary time. However, the telic situations in (8a), (9a), (10b) and (11b) have an intrinsic bound/set terminal point. In telic situations that involve measuring arguments, e.g. (8a) and (10b), the event is completed when the NP is totally affected. As for telic situations that involve direction/location arguments, e.g. (11b), the event is completed only when the set terminal point/location is reached (cf. Krifka (1989)).

5.1.2. Change of state

As Smith (1997:42) notes, change of state is a property of situations indirectly expressed through completion/telicity interacting with duration, as it has no specialized linguistic correlates. Time-relationally, change of state, as suggested by the term itself, seems to constitute a transition between two distinct states, i.e. a source state and a target state. Telic events involve a change of state and a result. In this study, it is argued that change of state is the natural endpoint/the set terminal point in telic events. As for atelic situations, the change of state marks the initial or the final (terminal and not the natural) endpoint of the situation. Moreover, states are distinguished as to whether or not they allow a change of state. Individual-level statives preempt a change of state, as in (12), unless an external agent has brought about the change, e.g. an accident. In contrast, stage-level statives do allow a change

of state (cf. (16-17) below).[7] The (++) or (--) signs in (12b) represent the undistinguished period of states.

(12) a. Süreyya uzunboylu-ydu ama *artık değil.   (individual-level stative)
        Süreyya tall-PRF-3sg but anymore not
        'Süreyya was tall but *not anymore.'

      b. ++++++   **or**   ----------

The activity in (13a) is characterized by a process, as in (13b), where the arrow represents the process. Although the activity involves various different movements of the legs and dislocation, it is cumulatively the same event with no change of state. Yet the activity may result in linguistically irrelevant changes on the experiencer, i.e. the external argument, (the runner), e.g. exhaustion and/or perspiration.

(13) a. Süreyya saatlerce koş-tu.   (activity)
        Süreyya for hours run-PRF-3sg
        'Süreyya ran for hours.'

      b. ....→........

On the other hand, telic events, i.e. achievements and accomplishments, inherently involve a change of state, but are distinguished on the basis of duration and non-detachability.   Smith (1997:43) mentions that the notion of non-detachability distinguishes accomplishment from achievement by relating process to result. In achievements, there is a result but no process. In (14a), as a result of the momentary act of reaching the finish line, the runner, who was not the winner before, becomes the winner. In that respect, the achievement marks the transition from a source state to a target state, as schematized in (14b).[8] This contrast between the source and target states is represented by the transition from (--) to (++) or from (++) to (--).

(14) a. Süreyya yarış-ı (*ağır ağır) kazan-dı.   (achievement)
        Süreyya race-ACC (*slowly) win-PRF-3sg
        'Süreyya won the race.'

b. ....--- | +++........... **or**   ....--- | +++..............

As for the accomplishment in (15a), the apple is gradually consumed and the change of state marks the transition into the state in which the apple does not exist anymore. If there is no more apple, i.e. if the result has been reached, then the prior process is entailed, i.e. the apple must have undergone a process of consumption. This is the formal correlate of non-detachability (cf. Smith (1997:26)). Note that the schema of an accomplishment in (15b) is composed of four parts: (i) source state, (ii) the process (→), (iii) the change of state (|), and (iv) the target state. The achievement schema in (14b), on the other hand, lacks the process in (15b).

(15)   a. Süreyya elma-yı (**ağır ağır**) ye-di.   (accomplishment)
       Süreyya apple-ACC (slowly) eat-PRF-3sg
       'Süreyya ate the apple.'

   b. ....---→ | +++....... **or**   ....+++→ | ---..........

Moreover, the process-oriented adverb *ağır ağır* 'slowly' is ungrammatical with the achievement in (14a) as opposed to the accomplishment in (15a). This behavior is due to what is made linguistically explicit about the change of state through grammatical and/or lexical means.

In this chapter, it will be illustrated that changes of state may be (i) result-oriented, (ii) process-oriented, or (iii) both result and process-oriented, as in the case of perfect of result where a process is linked to a result (cf. § 5.1.2.1 below). Note that these subcategories are due to the interaction of telicity (the result/the natural culmination) and duration (the process/the preliminary activity leading to the result) as indirect correlates of change of state.

Result-oriented change of state is in a sense "non-durative/instantaneous," as in achievements. In (14a) above, any prior process, e.g. years of training and the duration of the race itself, implied by the result is not linguistically made explicit,

and thus, is not available for adverbial specification. In that respect, achievements are result-oriented. The result-oriented change of state is further exemplified by the periphrastic expression in (16b). The auxiliary *ol-* marked with the general perfective *–DI* induces a change of state reading in the stage-level stative *şişman* 'fat' and the use of the process adverb *giderek* 'gradually' gives rise to ungrammaticality.

(16) a. Deniz zayıf.   ---------- | ++++++   Deniz şişman.
      Deniz thin   Deniz fat
      'Deniz is thin.'   'Deniz is fat.'

b. Deniz ayı kostüm-ü giy-ince (***giderek**) şişman ol-du.
Deniz bear costume-3sg wear-when (*gradually) fat become-PRF
'Deniz has become (looked) fat when she put on the bear costume.'

Process-oriented change of state occurs at the final endpoint of a linguistically explicit process which can be adverbially specified, as was illustrated by (15a). Like accomplishments, such changes of state are "durative/gradual." Process-oriented change of state may also be expressed derivationally, as in (17b), or periphrastically, as in (18a-b). In (17b), the derivational morpheme *–lA* in *şişman-la* with its meaning 'become,' denotes a gradual change in the source state, as a result of which the target state comes about, i.e. inchoative (cf. Smith (1997:22, 49)). The process can be adverbially specified, as illustrated by the felicity of *giderek* 'gradually' and the adverbial dependent clause expressing a process.

(17) a. Deniz zayıf.   .....+++→ | ---......   Deniz şişman.
      Deniz thin   Deniz fat
      'Deniz is thin.   'Deniz is fat.

b. Deniz büyü-dük-çe/**giderek** şişman-la-dı.
Deniz grow-DIK-DERIV/gradually fat-DERIV.-PRF
'Deniz has become fatter as she grew/gradually.'

Process-oriented changes of state are further exemplified by (18a-b). In Chapter 3, it was observed that aspectual distinctions like ingressive habitual in (18a)

and egressive habitual in (18b) are expressed periphrastically by the auxiliary *ol-* marked with the perfective *–DI* and the aorist marker *–Ar/Ir* on the inner predicate (cf. van Schaaik (2001)). In (18a) the initial endpoint of a habitual situation is focused, i.e. ingressive. In (18b) the final endpoint of a habitual situation is highlighted, i.e. egressive. Note that the process-oriented adverb *zamanla* 'by the time' is felicitous in (18a-b), as opposed to the adverb *aniden* 'suddenly.'

(18) a. **Zamanla/*aniden** yokluğ-u-nu daha çok hissed-er ol-du.
      by the time/*suddenly absence-3sg-ACC more feel-AOR be-PRF-3sg
      'By the time/*suddenly s/he started feeling its absence even more.'

      b. **Zamanla/??aniden** yokluğ-u-nu hisset-me-z ol-du.
      by the time/??suddenly absence-3sg-ACC more feel-NEG-AOR be-PRF-3sg
      'By the time/??suddenly s/he stopped feeling its absence.'

The following section will focus on the third kind of change of state, i.e. the one which is both result and process-oriented. This is the grammaticalized case of perfect of result where a process is linked to a result.

5.1.2.1. Perfect of Result

The perfect of result expresses a currently relevant state which is the result of some past situation (cf. Comrie (1976:56) also Bybee et al. (1994),[9] Smith (1997), Iatridou et al. (2000)). In Turkish, perfect of result can be expressed by the perfective marker *–DI* or the perfect marker *–mIş* (cf. Sezer (2001) among others), as illustrated by the achievement in (19a) and the accomplishment in (20a) below.

(19) a. Köprü **bir anda/*ağır ağır** çök-tü/çök-müş ve **hâlâ** öyle dur-uyor.
      bridge suddenly/*slowly collapse-PRF/~-PERF and still so stand-IMPRF
      'The bridge has suddenly collapsed and it is still in the same state.'

      b. Köprü **bir anda/*ağır ağır** çök-tü/çök-müş ama **yeniden** yap-ıl-dı.
      bridge suddenly/*slowly collapse-PRF/~-PERF but anew build-PASS-PRF-3sg
      'The bridge suddenly collapsed but it was rebuilt.'

(20) a. Köprü ***bir anda/ağır ağır** inşa ed-il-di/ed-il-miş ve **hâlâ** öyle dur-uyor.
      bridge *suddenly/slowly build-PRF/~-PERF and still so stand-IMPRF
      'The bridge has been built slowly and it is still in the same state.'

b. Köprü *bir anda/ağır ağır inşa ed-il-di/ed-il-miş ama bir anda çök-tü.
bridge *suddenly/slowly build-PRF/~-PERF but suddenly collapse-PRF
'The bridge was built slowly but it collapsed suddenly.'

As noted by Iatridou et al. (2000:6), this variety of perfect is possible only with telic situations, i.e. with achievements as in (19a) and accomplishments as in (20a). The target state following the change of state must still hold at TU, otherwise it would be impossible to differentiate the structure from the (past) perfective, as illustrated by (19b) and (20b). The felicitous conjuncts in (19a) and (20a) denote that a change of state has not been realized, although it is theoretically possible, i.e. the target state does not preempt a change over time.

The role of –mIş in the expression of perfect of result is distinct from that of –DI. Unlike –DI, which is just a verbal T/A marker, –mIş is both the perfect marker (cf. Sezer (2001) among others) and a participial form. As a verbal marker, –mIş expresses a prior change of state and a currently relevant target state in (21a-b) (cf. Aksu-Koç (1988:22), Smith's (1997) derived stativity).

(21)   a. Urumelihisarı'na otur-muş-um;
Rumeli Hissar-DAT sit-PERF-1sg
'I've sat at Rumeli Hissar.' (literal)

b. Otur-muş da bir türkü tuttur-muş-um.   (Orhan Veli Kanık)
sit-PERF part. one folk song start-PERF-1sg
'I've sat and started singing a folk song.' (literal)
'Sitting at Rumeli Hissar, I'm singing a folk song.' (actual stative reading)

As a participial marker, it distinguishes a present state arising from a prior event, as illustrated in (22c-23c), from a simple stage-level state, as in (22b-23b) (cf. Aksu-Koç (1988:22), Yavaş (1980), Kornfilt (1997)). Note that in (22b-23b) no prior process is made linguistically explicit and no causality is expressed. It is world knowledge and our understanding of causation[10] that tells us that clothes are wet when they have had contact with some liquid or that people feel tired when they have taken part in some activity. On the other hand, with the passive structure in (22c)

and the reflexive in (23c), –*mIş* is a linguistic correlate of the prior process, suggesting causality, if not agentivity (cf. Talmy (2000b:476)).

(22) a. Yağmur yağ-mış./yağ-dı. Çamaşır-lar ıslan-mış/ıslan-dı.
rain drop-PERF/~PRF clothes get wet-PERF/get wet-PRF
'It has been raining[11]/has rained. The clothes have become wet.'

b. Isla-k çamaşır-lar
wet-DERIV clothes
'wet clothes'

c. Islan-mış/*ıslan-dı çamaşır-lar
get wet-PERF/get wet-PRF clothes
'the clothes which have become wet.'

(23) a. Kadın yürü-müş. Yor-ul-muş/*-du.
woman walk-PERF. exhaust-PASS-PERF
'The woman has been walking. She has become tired.'

b. Yor-gun kadın.
exhaust-DERIV woman
'A tired woman'

c. Yor-ul-muş/*yor-ul-du kadın
exhaust-PASS-PERF/exhaust-PASS-PRF woman
'the woman who has become tired.'

As noted by Comrie (1976:57), while some languages use a grammatical means, i.e. the perfect, to express a resultative meaning, others use a stative verb or an adjective, ignoring how the state was brought about. Turkish seems among the former group of languages in that –*mIş* is used for 'derived-level' target states resulting from an anterior telic situation/a change of state, as in (22c-23c), while 'basic-level' target states are expressed derivationally as in (22b-23b).

In sum, the perfect of result seems to be distinguished from result-oriented and process-oriented changes of state in involving a resultant state, in addition to the source and target states. In the following section, the implications of this distinction will be illustrated to be highly relevant to Smith's (1997) participant property.

5.1.2.2. The Participant Property

Smith (1997:107) notes that in the English Present Perfect[12] sentences, the

subjects are assigned "the participant property" as a result of having participated in the anterior situation, as in (24) (cf. Giorgi & Pianesi (1997:93)).

(24) Henry has been fired.   Smith (1997:107, ex. 19a)

(25) a. Ali Paris'i gör-müş ol-du.
      A. Paris-ACC see-PERF be-PRF
      'Ali has assumed the property of having seen Paris.'

      b. Paris gör-ül-müş ol-du.
      Paris see-PASS-PERF be-PRF-3sg
      'Paris has assumed the property of having been seen.'

In (25a), marked with the periphrastic form –mIş ol-, Ali has the property of having seen Paris. There are three points to note about the participant property. Firstly, the participant property is not limited to experiencer human subjects and can be assigned to inanimate objects as well, as illustrated by (25b) where Paris is ascribed the property of having been visited. In that respect, the term 'participant' should be understood as any entity that takes part in a change of state, either agentively or passively. For example, in the causative (26a), the grammatical subject is agentive, while there is no agentivity involved in the intransitive (26b) and the (causative) passive (26c). In all cases, though, the grammatical subjects, the first person plural in (26a) and the chocolate in (26b-c), are participants that have been totally affected from the change of state.[13]

(26) a. Böylece çikolata-yı eri-t-miş ol-du-k ve **hâlâ** sıvı durum-da.
      thus chocolate-ACC melt-CAUS-PERF. be-PRF-1pl and still liquid state-LOC
      'Thus we ended up having melted the chocolate and it is still in a liquid state.'

      b. Böylece çikolata eri-miş ol-du ama **yine** katı-laş-tı.
      thus chocolate melt-PERF be-PRF-3sg but again solid-DERIV-PERF
      'Thus the chocolate ended up having melted but it has become solid again.'

      c. Böylece çikolata eri-t-il-miş ol-du.
      thus chocolate-ACC melt-CAUS-PASS-PERF. be-PRF
      'Thus the chocolate ended up having been melted.'

Secondly, this property is distinct from the target state and continues to obtain whether the target still holds or not, as illustrated by the felicity of the conjuncts in

(26a-b). In (26a) the target state of the chocolate, i.e. its liquid state, holds, while in (26b) there has been a further change of state, i.e. the chocolate is solid again. Note that the property of having melted the chocolate is distinct from its target (liquid) state. Thirdly, the participant property does <u>not</u> seem distinct from the "resultant state" identified by Parsons (1990), as in (27).

(27)   "It is important not to identify the Resultant State with its 'target' state. If I throw a ball on the roof, the target state of this event is the ball's being on the roof, a state that may or may not last for a long time. What I am calling Resultant State is different, it is the state of my having thrown the ball on the roof, and it is a state that cannot cease holding at some later time." (from Parsons (1990:235) (Parsons, T. 1990. *Events in the Semantics of English*. Cambridge: The MIT Press.) cited in Musan (2001b:376))

A target state, like the stage-level states *zayıf* 'thin' vs. *şişman* 'fat' in (16a) above, can be temporally modified and does not preempt a change of state. On the other hand, the resultant state, like the individual-level state *uzun boylu* 'tall' in (12a) above, is atemporal in the sense that it preempts any further changes of state.

5.2. Situation Type and Viewpoints: Implicit Bounds

The interaction of situation type with viewpoints is directly dependent on two properties of viewpoints: (i) boundedness information and (ii) quantificational reference. Both of these properties are directly related to the boundedness information and mereological structure of STs.

The perfective viewpoint imposes implicit bounds on a situation, whereas the imperfective does not involve any such implicit bounds. The implicit bound in the perfective refers to the terminal point in atelic STs (termination) in Turkish. As atelic STs are not intrinsically bounded, the implicit bound in the perfective serves to impose a temporal bound on the otherwise unbounded situations. On the other hand,

the implicit bound is identified with the set terminal point in telic STs and implies completion/total affectedness of the object. As a result, achievements and accomplishments are the unmarked choices in the perfective, while the marked choices, i.e. states and activities, often get an ingressive reading in the perfective (cf. Comrie (1976:20)).[14]

There are also unmarked and marked choices for the imperfective. As states and activities are intrinsically unbounded, they are the unmarked choices in the imperfective (cf. Ramchand (1997:41) "stative verbs are imperfective par excellence"). Achievements and accomplishments are marked choices for the imperfective and result in interpreted ST shifts. For example, the imperfective (non-durative) achievement in (28a) is presented with a slow-motion view or a number of iterative events are implied as in (28b), given adverbs such as *yıllardır* 'for years' that strengthen that meaning.

(28)   a. Bardağ-ı kır-ıyor.
        glass-ACC break-IMPRF.
        'S/he is breaking the glass.'

        b. M. Schumacher **yıl-lar-dır** bu yarış-ı kazan-ıyor.
        M. Schumacher year-PL-since this race-ACC win-IMPRF.
        'M. S. has been winning this race for years.'

The perfective is also different from the imperfective in terms of quantificational reference. While the perfective is analogous to quantization, the imperfective is cumulative.

(29)   a. Örgü ör-üyor-um. $\subset$ Örgü ör-dü-m.
        knit-IMPRF-1sg   knit-PRF-1sg
        'I'm knitting.'   'I have knitted.'

        b. Bir kazak ör-üyor-um. $\not\subset$ Bir kazak ör-dü-m.
        a pullover knit-IMPRF-1sg   knit-PRF-1sg
        'I'm knitting a pullover.'   'I have knitted a pullover.'

The imperfective makes cumulative reference to both the mass object in (29a)

and the count object in (29b), yielding an unbounded activity reading which does not imply completion/total affectedness. In the perfective, quantized reference to mass (29a) vs. count (29b) objects yields different results. Quantized reference to the mass object in (29a) implies termination of a cumulative activity, hence the felicity of the implication *I have knitted.* In contrast, quantized reference to a count object (29b) requires total affectedness of the object, i.e. an accomplishment. Consequently, *I have knitted a pullover.* is not implied by the cumulative imperfective in (29b) even though there is a count object. In other words, unless the set terminal point has been reached, we cannot talk about an accomplishment, as it is merely an activity directed towards the set terminal point. The following two subsections illustrate the interaction of the perfective and imperfective with the five STs.

5.2.1. The Perfective

The perfective is the unmarked choice for the semelfactive in (30), the achievement in (31) and the accomplishment in (32), denoting a closed, bounded view of the whole event. In (31-32) the implicit bound imposed by the perfective corresponds to the set terminal point (completion). The perfective is the marked choice for the activity in (33), which is understood to be temporally bounded (termination).

(30)   Nur öksür-dü.   (semelfactive)
        Nur cough-PRF.
        'Nur coughed.'

(31)   Leyla kara-yı gör-dü.   (achievement)
        Leyla. the land see-PRF.
        'Leyla spotted the land.'

(32)   Ayça bir kazak ör-dü.   (accomplishment)
        Ayça. a pullover knit-PRF.
        'Ayça knitted a pullover.'

(33)   Mualla yüz-dü.   (activity)
        Mualla. swim-PRF.
        'Mualla swam.'

As was mentioned in § 4.1.1, -*DI* triggers an ingressive reading on psychological/cognitive verbal states such as *sev-* 'love,' *anla-* 'understand,' *bil-* 'know' or *beğen* 'like' in (34a). As for verbs of location such as *yaşa-* 'live,' *dur-* 'stand' or *kal-* 'stay' there is no such shift. As the general perfective marker –*DI* does not appear on non-verbal stage-level and individual-level states in (34b-c) and such states are by default imperfective (cf. Ramchand (1997:41)), the discussion will only focus on psychological verbal states in the following sections. The –*(I)DI* marker on non-verbal states denotes past tense or modal distance. As illustrated by the felicity of the conjuncts with the stage-level state in (34b), the assertion is only limited to TT, which is anterior to TU, i.e. past tense. In contrast, the individual-level state in (34c) cannot be temporally bounded, hence the unacceptability of the conjuncts (unless the subject is understood to put on color lenses). As a result, the preferred reading of –*(I)DI* with the atemporal individual-level state in (34c) is modal distance, suggesting that the morpheme receives an epistemic modal function, when it no longer has a primary T/A function.

(34)   a. Aşkın badem-li tatlı-yı beğen-di.
        Aşkın almond-COM desert-ACC like-PRF-3sg
        'Aşkın likes (has enjoyed) the desert with almonds.'

        b. Aşkın **dün** üzgün-dü ve **hâlâ** öyle.// ama **bugün** neşeli.
        Aşkın yesterday sad-PAST and still so // but today cheerful
        'Aşkın was sad yesterday and he still is.// but he is cheerful today.'

        c. Aşkın mavi gözlü-ydü *ve **hâlâ** öyle.//*ama **bugün** yeşil gözlü.
        Aşkın blue-eyed-PAST and still so // but today green-eyed
        'Aşkın had blue eyes and *he still does.// *but he has green eyes today.'

BASIC-LEVEL ST	PERFECTIVE	TIME-REL. SCHEMATA
State (verbal)	ingressive	.....I(___F)......
State (non-verbal)	inapplicable	---
Activity	implicit bound added	.....I---------F_{arb}........
Semelfactive	no shift (default)	........E.........
Achievement	no shift (default)	...... E R ......
Accomplishment	no shift (default)	......I --------F_{nat} R......

Table 5.2: Basic-level STs marked with the perfective and their time-relational schemata

5.2.2. The Imperfective

The imperfective is the unmarked choice for the activity in (35) and the stative in (36a), presenting an open, unbounded partial view of the situation. Note that in (36b-c) not the general imperfective marker -*(I)yor* but the zero morpheme appears on the non-verbal predicates, indicating non-past/present tense rather than imperfectivity, as these predicates are imperfective by definition.

(35)   Mualla yüz-üyor.   (activity)
       Mualla swim-IMPRF.
       'Mualla is swimming.'

(36)   a. Aşkın badem-li tatlı-yı beğen-iyor.
       Aşkın almond-COM desert-ACC like-IMPRF-3sg
       'Aşkın likes the desert with almonds.'

       b. Aşkın **bugün** üzgün.
       Aşkın today sad-Ø-3sg
       'Aşkın is sad today.'

       c. Aşkın mavi gözlü.
       Aşkın blue-eyed-Ø-3sg
       'Aşkın has blue eyes.'

The imperfective is the marked choice for the semelfactive in (37), the achievement in (38) and the accomplishment in (39). The semelfactive in (37) gets a multiple-event activity reading.[15] As the imperfective is unbounded, the set terminal point in telic situations is understood not to have been reached, hence the shifted preliminary activity reading in (39) and the slow-motion or activity reading in (38).

In short, the imperfective amounts to removing a bound from otherwise bounded situations (cf. **Table 5.3**).

(37) Nur öksür-üyor.   (semelfactive→activity)
      Nur cough-IMPRF.
      'Nur is coughing.'

(38) Leyla kara-yı gör-üyor.   (achievement →activity)
      Leyla the land see-IMPRF.
      '*Leyla is spotting the land.'   (intended reading)
      'Leyla sees the land.'   (actual reading)

(39) Ayça bir kazak ör-üyor.   (accomplishment →activity)
      Ayça a pullover knit-IMPRF.
      'Ayça is knitting a pullover.'

BASIC-LEVEL ST	IMPERFECTIVE	TIME-REL. SCHEMATA
State (verbal)	no shift (default)	........(I)____(F)................
Activity	no shift (default)	......I----[----]-----F_{arb}........
Semelfactive	multiple-event activity	.....E......E......E.....E........
Achievement	slow-motion/activity	......I----[----]-----F_{arb}........
Accomplishment	preliminary activity	.....I------[----]------F_{arb}.....

Table 5.3: Basic-level STs marked with the imperfective and their time-relational schemata

5.3. Situation Type and Adverbials: Independent Bounds

T/A adverbials impose independent temporal bounds on situations, but not all T/A adverbials operate ST-internally so that they can trigger ST shifts. In the literature, especially two types of adverbials have been noted to interact closely with situation types and viewpoints (cf. Binnick (1991), Tenny (1994), Smith (1997), Krifka (1989) among others). The unbounded *for an hour* adverbs (cf. durative (cf. Iatridou et al. (2000)), simple duration (cf. Smith (1997)) and measure adverbs (cf. Krifka (1989))) are compatible with atelic STs. On the other hand, the bounded *in an hour* adverbs (cf. inclusive (cf. Iatridou et al. (2000)), completive (cf. Smith (1997)) and time interval adverbs (cf. Krifka (1989))) are compatible with telic STs. For example, the activity verb (super-lexical morpheme) *ilerle-* 'move' in (40a),

which is inherently atelic, is compatible with an unbounded *for an hour* adverb, while the inherently telic achievement verb *var-* 'reach' in (40b) is compatible with a bounded *in an hour* adverb, but not vice versa.

(40)   a. Uçurtma **(on dakika/*on dakika-da)** yamac-a doğru ilerle-di/ilerli-yor.
       kite (10 min./*10 min-LOC) cliff-DAT towards move-PRF/IMPRF-3sg
       'The kite moved/is moving towards the cliff (for 10 min./*in 10 minutes).'

       b. Uçurtma **(*on dakika/on dakika-da)** yamac-a var-dı/var-ıyor.
       kite (*10 min./10 minute-LOC) cliff-DAT arrive-PRF/IMPRF-3sg
       'The kite reached/is reaching the cliff (*for 10 min./in 10 minutes).'

Smith (1997) proposes the Principle of External Override to account for cases where there is a clash of feature values, e.g. unbounded adverbs with telic STs or bounded adverbs with atelic STs. This principle states that adverbs override the temporal/aspectual value of the VC, resulting in derived-level STs. The principle also holds for Turkish. It will be illustrated that the interpreted ST shifts due to such clashing feature values follow from the boundedness information contained in the viewpoints, STs and adverbs, hence are predictable because as was mentioned in § 5.2. above, viewpoints have unmarked and marked choices of STs and any marked choice presents a potential ST shift.

5.3.1. Bounded *in an hour* Adverbs with the Perfective

As the perfective imposes an implicit bound and the adverb *bir saatte* 'in an hour' involves an independent bound, telic situations are expected to be most felicitious among examples (41-45). On the other hand, atelic situations are predicted to undergo a shift, because a bound/an endpoint is added. The predictions are borne out. While the telic accomplishment in (41) and the achievement in (42) do not undergo any ST shift, the atelic stative in (44) and the activity in (45) are ingressive with focus on the initial endpoint of the situation. The atelic semelfactive in (43) behaves like the telic situations, probably due to its single stage property (cf. Smith (1997), Rothstein (2004)).

(41) Ayça **bir saat-te** bir kazak ör-dü. (accomplishment)
Ayça one hour-LOC a pullover knit-PRF.
'Ayça knitted a pullover (with)in one hour.'

(42) Leyla **bir saat-te** kara-yı gör-dü. (achievement)
Leyla one hour-LOC the land see-PRF.
'Leyla spotted the land (with)in one hour.'

(43) ??Nur **bir saat-te** öksür-dü. (semelfactive)
Nur one hour-LOC cough-PRF.
'Nur coughed (with)in one hour.'

(44) Mahpeyker Ömer'i **iki gün-de** sev-di. (state →ingressive)
Mahpeyker Ömer-ACC two day-LOC love-PRF.
'Mahpeyker fell in love with Ömer in two days.'

(45) ??Mualla **bir saat-te** yüz-dü. (activity→ingressive)
Mualla one hour-LOC swim-PRF.
'Mualla swam (with)in one hour.'

In (41-45) three overlap patterns are observed between A and the ST: (i) the right boundary (RB) of A overlaps with the non-durative achievement in (42) and the semelfactive in (43), (ii) the RB of A overlaps with the initial endpoint of the state in (44) and activity in (45), and (iii) A totally overlaps with durative, telic accomplishment in (41). In (41), the pullover (possibly for Lilliputians) is completed within A, i.e. the accomplishment, including its preliminary process, totally overlaps with A and culminates in a change of state that coincides with the RB of A (cf. **Table 5.4,** Chapter 6 for details on overlap patterns).

BASIC-LEVEL ST	PRF. & [+B] A	TIME-RELATIONAL SCHEMATA
State	ingressive	...............[$_A$___I.................
Activity	ingressive	...............[$_A$___I...........
Semelfactive	no shift (default)	...............[$_A$___E].................
Achievement	no shift (default)	...............[$_A$___E]R..........
Accomplishment	no shift (default)	..............[A/I___F$_{nat}$]R.............

Table 5.4: Basic-level perfective STs with bounded adverbs and their time-relational schemata

5.3.2. Bounded *in an hour* Adverbs with the Imperfective

In (46-50) the imperfective does not impose an implicit bound, but the adverb involves an independent bound. Therefore, we would expect a number of shifts in atelic situations, while telic situations would be felicitous as they are. As was the case in the previous section, the accomplishment in (46), the achievement in (47) and the semelfactive in (48) do not undergo any shift, while the state in (49) and the activity in (50) obtain an ingressive reading with the bounded adverb (A2). In addition, the imperfective yields an iterative reading, strengthened by the frequency adverb (A1) *her gece* 'every night.'

(46) Ayça [$_{A1}$ **her gece** [$_{A2}$ **bir saat-te**]] bir kazak ör-üyor. (accomplishment)
Ayça every night one hour-LOC a pullover knit-IMPRF.
'Ayça knits a pullover (with)in one hour every night.'

(47) Leyla [$_{A1}$ **her gece** [$_{A2}$ **bir saat-te**]] kara-yı gör-üyor. (achievement)
Leyla every night one hour-LOC the land see-IMPRF.
'Leyla spots the land (with)in one hour every night.'

(48) Nur [$_{A1}$ **her gece** [$_{A2}$ **bir saat-te**]] öksür-üyor. (semelfactive)
Nur every night one hour-LOC cough-IMPRF.
'Nur coughs (with)in one hour every night.'

(49) Mahpeyker Ömer'i **iki gün-de** sev-iyor. (state →ingressive)
Mahpeyker Ömer-ACC two day-LOC love-IMPRF.
'Mahpeyker falls in love with Ömer in two days.'

(50) Mualla [$_{A1}$ **her gece** [$_{A2}$ **bir saat-te**]] yüz-üyor. (activity→ingressive)
Mualla every night one hour-LOC swim-IMPRF.
'Mualla swims (with)in one hour every night.'

The three overlap patterns observed in the perfective STs with bounded adverbs are also instantiated in the imperfective STs with the same adverbs, suggesting that these patterns are dependent on the durativity and telicity of the STs rather than viewpoint morphology. The frequency adverb A1 *her gece* co-occurring with the imperfective morphology specifies a higher adverbial span within which the individual multiple instances of the situations take place, thus strenghtening

frequentative and habitual readings (cf. **Table 5.5**).

BASIC-LEVEL ST	IMPRF & [+B] A	TIME-RELATIONAL SCHEMATA
State	ingressive+(iterative)	...[$_{A1}$........[$_{A2}$___I]...[$_{A2}$___I]..........]......
Activity	ingressive+iterative	......[$_{A1}$....[$_{A2}$____I]......[$_{A2}$____I].....].......
Semelfactive	no shift +iterative	....[$_{A1}$....[$_{A2}$____E]...[$_{A2}$____E]....]..........
Achievement	no shift +iterative	.........[$_{A1}$........[$_{A2}$_____E] R..........
Accomplishment	no shift +iterative	...[$_{A1}$....[$_{A2/I}$---F$_{nat}$]R...[$_{A2/I}$---F$_{nat}$]R...]..

Table 5.5: Basic-level imperfective STs with bounded adverbs and their time-relational schemata

5.3.3. Unbounded *for an hour* Adverbs with the Perfective

In (51-55), the perfective morphology which imposes an implicit bound co-occurs with an unbounded adverb which does not involve an independent bound. As adverbials rather than viewpoint morphology seem to trigger ST shifts, telic STs are predicted to undergo shifts since they are not compatible with unboundedness. Indeed, the activity in (52) is felicitous with the unbounded A *bir saat* 'for an hour,' but the state in (51) seems to require a longer time span. In contrast, the semelfactive in (53) gets a multiple-event activity reading and the achievement in (54a) is ungrammatical unless the predicate is reinterpreted as an activity of watching the land. (54b) is marginally acceptable if the event of winning is iterated within A. The accomplishment in (55) can only be understood as the preliminary process which does not reach the set terminal point.[16]

(51) Mahpeyker Ömer'i **yirmi yıl/?bir saat** sev-di. (state)
       Mahpeyker Ömer-ACC twenty years/?one hour love-PRF.
       'Mahpeyker loved Ömer for twenty years/?one hour.'

(52) Mualla **bir saat** yüz-dü. (activity)
       Mualla one hour swim-PRF.
       'Mualla swam for an hour.'

(53) Nur **bir saat** öksür-dü. (semelfactive→ multiple-event act.)
       Nur night one hour cough-PRF.
       'Nur coughed for an hour.'

(54) a. *Leyla **bir saat** kara-yı gör-dü. (achievement)
  Leyla one hour the land see-PRF.
  'Leyla spotted the land for an hour.'

  b. ??Leyla poker-de **bir saat** kazan-dı. (achievement→?activity)
  Leyla poker-LOC one hour win-PRF.
  'Leyla won for an hour at the poker game.'

(55) ??Ayça **bir saat** bir kazak ör-dü. (accomplishment→?activity)
  Ayça one hour a pullover knit-PRF.
  'Ayça knitted a pullover for an hour.'

There are two patterns of overlap between A and STs. In the first pattern, the state in (51), the activity in (52) and the shifted accomplishment in (55) totally overlap with the durative unbounded adverb A. In the second pattern, the individual iterated instances of the single stage events, namely the semelfactive in (53) and the achievement in (54b), are contained within A (cf. **Table 5.6**).

BASIC-LEVEL ST	PRF. & [-B] A	TIME-RELATIONAL SCHEMATA
State	no shift	............$[_A/I$_____$(F)]$.................
Activity	no shift	............$[_A/I$_____$F_{arb}]$..................
Semelfactive	multiple-event activ.	..............$[_{A2}$......E.....E.....E...]...........
Achievement	?activity	........$[_{A2}$...$E.R..E.R$...$E.R..E.R$..]...........
Accomplishment	preliminary activity	........$[_{A2}/I$_____$F_{arb}]$............

Table 5.6: Basic-level perfective STs with unbounded adverbs and their time-relational schemata

5.3.4. Unbounded *for an hour* Adverbs with the Imperfective

In (56-60), the imperfective does not impose an implicit bound, nor does the unbounded adverb impose an independent bound. Therefore, atelic STs are expected to be most felicitous, whereas telic STs are predicted to be ungrammatical or shifted. In addition, the imperfective morphology is expected to trigger iterativity with the frequency adverb (A1) *her gece* 'every night.' As predicted, the stative in (56) and the activity in (57) are felicitous with the unbounded adverb without undergoing any shift. The frequency adverb A1 and the imperfective morphology trigger an iterative

reading in (57).

(56)   Mahpeyker Ömer'i [**iki gün**] sev-iyor, **üçüncü gün** unut-uyor. (state)
Mahpeyker Ömer-ACC two day love-IMPRF. third day forget-IMPRF.
'Mahpeyker loves Ömer for two days, and forgets him on the third day.'

(57)   Mualla [$_{A1}$ **her gece** [$_{A2}$ **bir saat**]] yüz-üyor. (activity)
Mualla every night one hour swim-IMPRF.
'Mualla swims for an hour every night.'

The semelfactive in (58) obtains a multiple-event activity reading with the unbounded A2 and this one-hour activity is understood to be iterated every night over A1. The achievement in (59a) is ungrammatical, as the durative, unbounded adverb A2 is compatible neither with non-durativity nor telicity. (59b) is marginally acceptable only if it is shifted into an iterative activity. Likewise, the accomplishment in (60) can only have a marginal iterated activity reading.

(58)   Nur [$_{A1}$ **her gece** [$_{A2}$ **bir saat**]] öksür-üyor. (semel.→ multiple-event activ.)
Nur every night one hour cough-IMPRF.
'Nur coughs for an hour every night.'

(59)   a. *Leyla [$_{A1}$ **her gece** [$_{A2}$ **bir saat**]] kara-yı gör-üyor. (achievement)
Leyla every night one hour the land see-IMPRF.
'*Leyla spots the land for an hour every night.'

b. ??Leyla poker-de [$_{A1}$ **her gece** [$_{A2}$ **bir saat**]] kazan-ıyor.(achiev.→activity)
Leyla poker-LOC every night one hour win-IMPRF.
'Leyla wins for two hours at the poker game every night.'

(60)   ??Ayça [$_{A1}$ **her gece** [$_{A2}$ **bir saat**]] bir kazak ör-üyor. (accomp.→?activity)
Ayça every night one hour a pullover knit-IMPRF.
'Ayça knits a pullover for an hour every night.'

Two overlap patterns are observed between A2 and STs. In the first case, the state in (56), the activity in (57) and the shifted accomplishment in (60) totally overlap with the durative unbounded adverb A2. In the second case, the individual iterated instances of the single stage events, namely the semelfactive in (58) and the achievement in (59b), are contained within A2. Note that these overlap patterns are identical to those observed with perfective STs and unbounded adverbs in the

previous section, except for one difference. The frequency adverb A1 *her gece* 'every night' contains multiple instances of one-hour intervals which overlap with the ST in the first or the second pattern (cf. **Table 5.7**).

BASIC-LEVEL ST	IMPRF. & [-B] A	TIME-RELATIONAL SCHEMATA
State	no shift+(iterative)	....[$_{A1}$....[$_{A2}$/I__(F)]....[$_{A2}$/I__(F)]...]....
Activity	no shift +iterative	..[$_{A1}$....[$_{A2}$/I___F$_{arb}$]...[$_{A2}$/I___F$_{arb}$]....]..
Semelfactive	multiple-ev. act.+iter.	...[$_{A1}$..[$_{A2}$...E...E..E.]...[$_{A2}$...E...E..E.]...]..
Achievement	activity + iterative	...[$_{A1}$..[$_{A2}$..E.R..E.R..]. [$_{A2}$..E.R..E.R..]....
Accomplishment	prelim. act.+iterative	..[$_{A1}$....[$_{A2}$/I___F$_{arb}$]...[$_{A2}$/I__F$_{arb}$]...].....

Table 5.7: Basic-level imperfective STs with unbounded adverbs and their time-relational schemata

5.4. Discussion

In the present chapter, the role of dynamism, duration, completion/telicity and change of state in defining and categorizing situations into basic-level and derived-level situation types has been considered with special focus on the theoretical and empirical implications of Smith's (1997) informal proposal on the feature [Bounded] for Turkish.

The interaction of STs with objects, viewpoints and adverbials suggests that (i) the intrinsic bounds are not distinct from the set terminal point involved in telicity/completion, (ii) the Turkish perfective imposes implicit bounds on the STs it operates on, and (iii) adverbials impose independent temporal bounds on the situations. Note that the intrinsic bounds, implicit bounds and independent bounds represent the three parameters of aspect proposed in the study, namely ST, viewpoint and adverbials respectively. This, in turn, suggests that boundedness is independently expressed by each of the three parameters.

In order to observe the contribution of each parameter and the interaction among them, all theoretically possible interpreted ST shifts arising from the co-

occurrence of [+/- bounded] adverbs, STs and viewpoints with clashing feature values have been investigated. The boundedness value of the adverbial seems to override those of viewpoints and/or STs. In fact, the implicit bound in the perfective does not cause shifts if the feature values of the adverb and the STs are compatible. Moreover, the boundedness value of the perfective can be overridden by adverbs or STs.

Three types of adverbials have been observed. Adverbials such as *bu sabah 7 ile 8 arası* 'this morning between 7 and 8' in (4b) provide information about the temporal location of a situation without causing any shifts, i.e. they are not ST-internal. On the other hand, the bounded *in an hour* vs. unbounded *for an hour* adverbs are ST-internal and actively involved in triggering ST shifts when there is a clash of features. In addition, adverbs like *her gece* 'every night' in (57-60) trigger iterativity and strengthen frequentative/habitual readings.

Section	ADVERB	VIEWPOINT	ST	RESULT
§ 5.3.1.	in an hour [+B]	perfective [+B]	telic [+B]	[+B] no shift
§ 5.3.1.	in an hour [+B]	perfective [+B]	atelic [-B]	[+B] ingressive
§ 5.3.2.	in an hour [+B]	imperfective [-B]	telic [+B]	[+B] no shift, iterative
§ 5.3.2.	in an hour [+B]	imperfective [-B]	atelic [-B]	[+B] ingressive, iterative
§ 5.3.3.	for an hour [-B]	perfective [+B]	telic [+B]	[-B] activity, iterative
§ 5.3.3.	for an hour [-B]	perfective [+B]	atelic [-B]	[-B] no shift
§ 5.3.4.	for an hour [-B]	imperfective [-B]	telic [+B]	[-B] activity, iterative
§ 5.3.4.	for an hour [-B]	imperfective [-B]	atelic [-B]	[-B] no shift, iterative

Table 5.8: Interpreted ST shifts due to the clashing feature values of co-occurring adverbs, STs and viewpoints

The influence of viewpoints seems to follow from the unmarked vs. marked choices. The perfective marker on an unbounded state is a marked choice, like the use of the imperfective marker on a bounded, instantaneous achievement is. Likewise, most interpreted ST shifts are predictable. For example, an atelic ST

usually gets an ingressive reading when it co-occurs with the bounded perfective and a telic ST obtains an activity reading with an unbounded element. These findings suggest a number of rule-governed patterns based on the boundedness of the adverbs (cf. **Table 5.8** above).

In sum, the three types of bounds namely (i) intrinsic, (ii) implicit and (iii) independent (explicit) correspond to the three parameters, even though the parameters do not seem to be equal in relative weight.[17] For example, in Turkish, the adverbs have a crucial role in the overall boundedness value of the sentence, providing evidence for Smith's (1997) Principle of External Override. In that respect, T/A adverbials in Turkish should be recognized as the third parameter, because they have at least as much weight as the other two parameters, i.e. viewpoint aspect and STs, do.

CHAPTER SIX

A TIME-RELATIONAL ACCOUNT OF

TURKISH TEMPORAL/ASPECTUAL ADVERBIALS

6.0. Introduction

In this chapter, our aim will be to answer the following three questions: (i) what

is the function of T/A adverbials in a sentence?, (ii) what are the categories of Turkish

T/A adverbials based on their semantic function? and (iii) can their semantic

contribution be accounted for time-relationally? In order to answer these questions, let

us recall a number of observations made so far in the previous chapters.

In Chapter 3, the adverbs that co-occur with the perfective and imperfective

viewpoints were observed to specify the temporal location of the situation rather than

triggering ST shifts. In Chapter 4, frequency adverbs were illustrated to specify how

frequently multiple instances of the same kind of situation occurred. In addition,

adverbs like *hâlâ* 'still' and *tekrar* 'again' were shown to be directly relevant to the

notions of continuity and iterativity respectively. More importantly, a number of

adverbs were observed to trigger perfect readings and were obligatory in such sentences.

In Chapter 5, *in an hour* vs. *for an hour* adverbs were shown to operate ST-internally

and thus trigger ST shifts. In short, there seem to be a number of distinct functions

borne by T/A adverbials, making a comprehensive, unitary account difficult. However,

as Smith (1981) notes, information supplied by adverbials is required for a proper

temporal interpretation of a sentence, just as both tense and viewpoint information is

required in a sentence. Therefore, a principled account of T/A adverbials is required.[1]

It is argued that a time-relational analysis will capture the observed facts and lead

to a comprehensive categorization of Turkish T/A adverbials. The proposal is based on two ideas. Firstly, the common feature of all T/A adverbials seems to be imposing independent bounds, as was noted in Chapter 5. Secondly, it is argued that the schema in (1a) can be developed to represent any temporal interval, including adverbial intervals. The temporal schema in (1a) adapted from Smith (1997:13) represents the interpretation of aspectual viewpoints and situation types as visible information between the initial endpoint (I) and the final endpoint (F).

(1)   a. ...............I............F................

        b. ....(LB)_____(RB)...........   (independent bounds left implicit)

        c. ....LB_____RB..............   (independent bounds made explicit)

Like all intervals, adverbials have initial and final endpoints. The initial endpoint in (1a) will be called the Left Boundary (henceforth LB) and the final endpoint in (1a) will be termed the Right Boundary (henceforth (RB). In analogy to situation types and viewpoints, whose temporal bounds may be intrinsic or implicit respectively, the independent boundaries of adverbial intervals may be left linguistically implicit, as schematized in (1b) or made explicit by overt lexical means, as represented in (1c). For example, in an expression involving *sırasında* 'during,' as in (2a), or those in (2b), there are independent bounds but they are lexically implicit. In contrast, independent temporal bounds made explicit involve overt lexical items that mark the boundaries, as illustrated by the NP complements of the postpositions ..*–DAn* ..*-A kadar* 'from .. to..'and *arasında* 'between' in (2c).

(2)   a. Toplantı sırasında
        meeting during
        'during the meeting'

b. geçen Şubat/1995'te
'last February/in 1995''

c. bir-le yedi arası-nda/ bir-den yedi-ye kadar
one-COM seven between-LOC/ one-ABL seven-DAT until
'between one and seven/ from one to seven'

Note that the basic assumption for a time-relational analysis is that adverbials are time intervals with the universal properties of intervals such as endpoint properties and the possibility to establish order and overlap relations with other time intervals (cf. Chapter 3). Indeed, it is argued that T/A information supplied by adverbials can be most economically and exhaustively captured in terms of overlap relations, which independently hold of all time intervals. In brief, T/A adverbials are argued to be lexical tools to establish overlap relations with TS, in analogy to viewpoint aspect which is a grammatical tool to express overlap relations between TS and TT (cf. Bull (1971), Klein et al. (2000)).

Intervals representing T/A adverbials (henceforth A) may also overlap with a PO. When they overlap with a PO, e.g. in the case of pluperfect, they supply information about the relative position of PO on the time axis with respect to TU in cooperation with T/A morphology. When T/A adverbs are associated with TS, they supply information not only about the temporal location of TS with respect to TU, but also about the internal temporal constituency of TS.

The information about the internal temporal constituency of TS is supplied by Frame. Frame[2] is a theoretical construct which arises from an overlap relation between A and TS and is argued to be the adverbial analogue of the overlap relation between TT and TS, i.e. Viewpoint. Frame is similar to Viewpoint in two respects: (i) it provides information about the internal temporal constituency of TS, and thus (ii) is ST-internal

(cf. **Table 6.1**).

OVERLAP RELATIONS BETWEEN TIME INTERVALS & THEIR LINGUISTIC EXPRESSION	
VIEWPOINT (TT&TS)	FRAME (A&TS)
T/A morphology	Position and Quantity adverbs
internal temporal constituency of TS (ST-internal)	

Table 6.1: Overlap relations between time intervals and their linguistic expression

In sum, Turkish T/A adverbial expressions will be argued to be "labels" for temporal intervals that establish overlap relations with TS, i.e. **Frame**. Turkish T/A adverbials will be illustrated to fall into two general classes: (i) **Position** and (ii) **Quantity** (cf. § 6.1. and 6.3. respectively). Roughly speaking, Position adverbs basically specify the temporal location of TS or PO with respect to TU, while Quantity adverbs mainly express aspectual specifications such as duration, frequency, etc., operate ST-internally or trigger perfect readings.

6.1. Position Adverbials

Position adverbials are the most common T/A adverbials that answer the questions: 'When?' and 'What time?' (cf. 'frame adverbials' Binnick (1991), Bennett & Partee (2004), 'locating adverbials' Smith (1997). Position adverbials specify the exact location of a PO or TS, with which they overlap, with respect to TU, either directly or indirectly. They do not trigger ST shifts, i.e. are ST-external, and mostly co-occur with the perfective and imperfective viewpoints. Position adverbials have two other properties: (i) they involve lexical and/or morphological means to indicate temporal order relations, namely simultaneity, anteriority and posteriority, and (ii) they differ as to how much referential information they contain and the extent to which this information is lexicalized.

Firstly, expressions of simultaneity involve the deictic adjective *bu* 'this,' as in (3a) and the postpositions *–A doğru/-A karşı* 'towards,' as in (3b-d). There are also frozen expressions with postpositions such the ones in (3c).

(3) a. Bu gece/hafta/Cuma/*1994
     this night/week/Friday/*1994
     'tonight/this week/this Friday/*this 1994

     b. sabah-a karşı/*doğru// akşam-a/öğlen-e doğru/*karşı
     morning-DAT against/*toward//evening-DAT/noon-DAT toward/-against
     'towards the morning//towards the evening/noon'

     c. öğle üzeri/üst-ü, akşam üst-ü/öğlen-den sonra
     noon top/top-3sg/evening top-3sg/noon-ABL after
     'around noon/ in the late afternoon/in the afternoon'

     d. sekiz gibi/ sekiz-e doğru/ sekiz su-lar-ı-nda
     eight like, eight-DAT towards, eight water-PL-3sg-LOC
     'eightish, towards eight, around eight'

The derivational morphemes *–In* in (4a) and *–leyin* in (4b) are also means to express simultaneity. It is also possible to refer to periods of the day without any marking as in (4c) or with the word *vakit* 'time' as in (4d).

(4) a. yaz-ın/ kış-ın/ güz-ün
     summer-In/winter-In/autumn-In
     '(in/during the) summer, winter, autumn'

     b. sabah-leyin/ öğle-yin/ akşam-leyin/gece-leyin
     morning-leyin/noon-leyin/evening-leyin/night-leyin
     in the morning/ at noon/ in the evening/ at night

     c. sabah/ öğle/ ikindi/ akşam/ gece/ gündüz
     'morning/ noon/ afternoon/ evening/ night/ daytime'

     d. kuşluk/akşam/şafak vakt-i
     early noon/evening/dawn time-3sg
     'at early noon/in the evening (time)/at dawn (time)'

As can be expected, the locative Case *–DA*, as in (5a), is widely used to express temporal location/position. The plural marker *-lAr* and the *–I* morpheme add a habitual

meaning in (5b), such that the situation is understood to take place every summer/winter/spring.

(5)   a. Çağ-ımız-da/21. yüzyıl-da/öğlen-de/ ikindi-de/ şafak-ta
age-1pl-LOC/21st century-LOC/noon-LOC/ afternoon-LOC/ dawn-LOC
'in our century/in the 21st century/at noon/in the afternoon/at dawn'

       b. Yaz-lar-ı/kış-lar-ı/bahar-lar-ı
summer-PL-I/winter-PL-I/spring-PL-I
'in the summer(s)/winter(s)/spring(s)'

Secondly, a major means to express anteriority involves an adjectival/participial expression, e.g. *geçen* 'previous', *evvelki* 'the one before,' etc. followed by 'clock-calendar' time expressions, as illustrated in (6a). This structure does not allow definite years of the Gregorian calendar or hours, as in (6b).

(6)   a. Geç-en/geç-tiğ-imiz/evvel-ki/önce-ki yüzyıl/yıl/yaz/Mayıs/Salı
pass-An/pass-DIK-1pl/previous-ki/before-ki century/year/summer/May/Tuesday
'the previous century/year/summer/May/Tuesday'

       b. *Geç-en/geç-tiğ-imiz/evvel-ki/önce-ki 1995/saat 7
pass-An/pass-DIK-1pl/previous-ki/before-ki 1995/hour 7
'*the previous 1995/7 o'clock'

A second means to express anteriority makes use of the postposition *–DAn önce/evvel* 'before' whose complement can be any 'clock-calendar' time expression including the ones in (6b), as illustrated by (7a). The postposition can also appear with time words marked with the deictic adjective *bu* 'this,' with other deictic words such as *yarın* 'tomorrow,' with NPs denoting events, or the quantifier daha 'more' or as in (7b).

(7)   a. 13. yüzyıl-dan/Mayıs'tan /Salı'dan/1995'ten/saat 7'den önce
13th century-ABL/May-ABL/Tuesday-ABL/1995-ABL/hour 7-ABL before
'before the 13th century/May/Tuesday/1995/7 o'clock'

       b. Bu yıl-dan/kış-tan/yarın-dan önce; toplantı-dan önce/daha önce
this year-ABL/winter-ABL/tomorrow before; meeting-ABLbefore/more before
'before this year/winter/tomorrow; before the meeting/earlier'

Thirdly, to express posteriority, an adjectival or participial expression, e.g.

gelecek 'next', *sonraki* 'the following one,' etc. can be followed by 'clock-calendar' time expressions, as illustrated in (8a), but not definite years or hours, as in (8b). The distribution of the posteriority postpositions *–DAn sonra* and *–I takiben* 'after' in (9a-c) is similar to the anteriority postposition. Their complement can be any 'clock-calendar' time expression, as illustrated by (9a-c).

(8)   a. Gel-ecek/yaklaş-an/ön-ümüz-de-ki/sonra-ki çağ/kış/günler
           come-AcAK/approach-An/front-1pl-LOC-ki/next-ki age/winter/day-PL
           'the following age/winter/days'

           b. *Gel-ecek/sonra-ki 2005/saat 7
           come-AcAK/next-ki 2005/hour 7
           '*the following 2005/7 o'clock'

(9)   a. 13. yüzyıl-dan/Mayıs'tan /Salı'dan/1995'ten/saat 7'den sonra
           13th century-ABL/May-ABL/Tuesday-ABL/1995-ABL/hour 7-ABL after
           'after the 13th century/May/Tuesday/1995/7 o'clock'

           b. Bu yıl-dan/kış-tan/yarın-dan sonra; toplantı-dan sonra/daha sonra
           this year-ABL/winter-ABL/tomorrow-ABL after; meeting-ABL after/more after
           'after this year/winter/tomorrow; after the meeting/later'

           c. Kış-ı/toplantı-yı takiben
           winter-ACC/meeting-ACC following
           'after winter/the meeting'

With respect to the referential information contained in an adverb, a number of categories have been proposed (cf. Bull (1971), Smith (1981),[3] Binnick (1991)[4] among others). In this study, two categories of adverbials are distinguished on the basis of the anchor: (i) deictic and (ii) non-deictic. Those adverbials that are directly anchored to TU are deictic, while those adverbials that are indirectly anchored to TU via some intermediary PO are non-deictic.[5] The adverb in (10a) is deictic, i.e. it is anchored to TU. On the other hand, the non-deictic adverb in (10b) is anchored to a PO other than TU, and indirectly related to TU (cf. 'clock-calendar' expression in Smith (1981), 'chronological' in Binnick (1991), 'position-bound' in Bull (1971)). In fact, the relative

position of the adverb in (10b) with respect TU is bound by the Gregorian calendar.

(10)　a. Ayşe'yle [**bugün**] görüş-tü-k. (deictic)
Ayşe-COM today talk-PRF-1pl
'We talked to Ayşe today'

b.Bu bina [**1990'da**] inşa ed-il-di. (non-deictic)
this building 1990-LOC build-PASS-PRF-3sg
'This building was constructed in 1990.'

In Turkish, while most Position adverbs make use of lexical/morphological other means available in the language and are dependent on T/A morphology in the sentence or the context[6] for the precise anchoring, there are only a few words which inherently contain lexicalized deictic information.[7] For example, *dün* 'yesterday' is a lexicalized expression of anteriority, *yarın* 'tomorrow' and *haftaya*[8] 'next week' express posteriority and *bugün*[9] 'today,' and *şimdi* 'now' express simultaneity with respect to TU.

6.2. Overlap Relations: Frame

Frame arises from an overlap relation between the interval expressed by A and TS, in analogy to that between TS and TT in viewpoint aspect. There are four set-theoretical patterns of overlap between any two intervals (cf. Chapter 3). These will be called Pattern I (total overlap/equality), Pattern II and III (partial overlap/proper inclusion) and Pattern IV (partial overlap/inclusion) (cf. **Table 6.2** below).

The examples in (11-18) below illustrate the linguistic instantiations of these four patterns of overlap in Turkish. As Frame operates TS-internally, it is closely related to STs, imposing a number of co-occurrence restrictions with viewpoints. It will be shown that the contrast between perfective and imperfective in terms of total vs. partial overlap is paralleled in Frame patterns. In fact, Universal Perfect and varieties of Existential Perfect also exhibit similar overlap patterns. This is only expected since these overlap patterns arise from set-theoretical relations between intervals.

Definition	Set-theoretical representation	Time-relational representation	Frame Pattern
Total overlap: Equality of TS and A TS equals/totally overlaps with A	TS = A	........A/TS.......	P I
Partial overlap: Proper Inclusion of A in TS A is a proper subset of/contained in TS	A ⊂ TS	......[$_{TS}$...A...]....	P II
Partial overlap: Proper Inclusion of TS in A TS is a proper subset of/contained in A	TS ⊂ A	....[$_A$...TS...].....	P III
Partial overlap: Inclusion A intersects with TS (and vice versa)	Y ∩ X, X ∩ Y	...[A...{TS_]..}.. ...[TS...{A_]..}..	P IV

Table 6.2: Four patterns of overlap between TS and A, or any two intervals.

Pattern I, i.e. total overlap between TS and A, is illustrated in (11a-b) and (12a-d) below and schematized in (11a'). The non-durative semelfactive in (11a) and the achievement in (11b) totally overlap with the interval A, i.e. TS is equal to A, assuming that in an idealized world a momentaneous event actually lasts a single moment.

(11) a. Gong [**saat tam üç-te**] çal-dı. (semelfactive)
gong hour exactly three-LOC ring-PRF-3sg
'The gong rang at exactly three o'clock.'

a'. ....A/TS........................   (**Pattern I**)

b. Uçak [**saat yedi otuz-da**] Atatürk Havalimanı-na in-di. (achievement)
plane hour seven thirty-LOC Atatürk airport-DAT land-PRF-3sg
'The plane landed at Atatürk Airport at seven thirty.'

Pattern I is also acceptable with durative STs, as long as the duration properties of the situations are compatible with those of the adverbials. The activity in (12a), the stage-level stative in (12b) and the accomplishment in (12d) totally overlap with the interval denoted by A, as schematized in (12a'). As for the individual-level stative in (12c), the adverbial is required to match the atemporal/omnitemporal nature of the situation, looking at the ungrammaticality of *iki saat* 'for two hours' as opposed to the

acceptability of *her zaman* 'always.'

(12) a. [**Tam iki saat**] uyu-du-m. (activity)
      exactly two hour sleep-PRF-1sg
      'I slept exactly for two hours.'

      a'. ....[A/TS_____]............   **(Pattern I)**

      b. Müze [**dokuz-dan beş-e**] kadar açık kal-acak. (stage-level stative)
      museum nine-ABL five-DAT open remain-FUT-3sg
      'The museum will be/remain open from 9 to 5.'

      c. İki kere iki [**her zaman**]/*[**iki saat**] dört ed-er. (individual-level stative)
      two times two always/*two hour four make-AOR
      'Two times two always makes four/*for two hours.'

      d. Bu öykü-yü [**üç saat içinde**] oku-du-m. (accomplishment)
      this story-ACC three hour within read-PRF-1sg
      'I read (completed) this story within three hours.'

With respect to compatibility with viewpoints, perfective seems to be the default

viewpoint for Pattern I. With non-durative STs, A totally overlaps with TS, in analogy

to the total overlap between TT and TS in the perfective. With durative STs, the total

overlap relation serves to measure the duration of TS. In addition, in Universal perfect,

A and TS totally overlap, thus exhibiting Pattern I (cf. Chapter 4).

Pattern II, the proper inclusion of the interval denoted by A in TS, is

exemplified by the durative activity in (13a) and the stage-level stative in (13b) below.

Note that the imperfective is the viewpoint required for Pattern II because for A to be

contained within TS, TS must be durative and presented imperfectively, as in (13a').

(13) a. [Saat üç-te] uyu-yor-du. (activity)
      hour three-LOC sleep-IMPRF-PRF-3sg
      'S/he was sleeping/asleep at three o'clock.'

      a'. ....[TS...........A.........].................   **(Pattern II)**

      b. Müze [**saat dokuz-da**] açık-tı. (stage-level stative)
      museum hour nine-LOC open-PRF-3sg
      'The museum was open at 9.'

If the activity in (13a) were marked with the perfective –DI, it would get an ingressive reading, i.e. *fall asleep*, and thus become non-durative. This would result in a Pattern I relation between A and TS. For this reason, it is not possible for semelfactive and achievements to instantiate a Pattern II relation, because they are momentaneous and have no internal stages. A semelfactive is acceptable only as a shifted multiple-event activity as in (14a) and an achievement gets an activity reading as in (14b). As expected, the individual-level stative in (14c) is not felicitious, since it does not allow a subinterval to be associated with an adverbial. An activity reading is attained in (14d) instead of the intended accomplishment reading, as there is no information as to the culmination of the event.

(14)   a. [**Saat üç-te**] öksür-üyor-du. (multiple-event activity)
           hour three-LOC cough-IMPRF-PRF-3sg
           'S/he was coughing at 3.

           b. Uçak [**saat yedi otuz-da**] Atatürk Havalimanı-na in-iyor-du. (activity)
           plane hour seven thirty-LOC Atatürk aeroport-DAT land-IMPRF-PRF-3sg
           'The plane was landing at Atatürk Aeroport at seven thirty.'

           c. İki kere iki [*****o vakit-ler**] dört ed-er-di. (individual-level stative)
           two times two that time-PL four make-AOR-PRF
           'Two times two always makes four/*for two hours.'

           d. Bu öykü-yü [**saat üç-te**] oku-yor-du-m. (accomplishment → activity)
           this story-ACC hour three-LOC read-IMPRF-PRF-1sg
           'I was reading this story at three.'

Pattern III, the proper inclusion of TS in A, is illustrated in (15a-d) below. With the non-durative achievement in (15a) and the semelfactive in (15b), TS holds within the interval specified by A, as schematized in (15a'). The durative activity in (15c) and the accomplishment in (15d) are specified by 'Scalar Quantity' adverbs, namely *bir saat* 'for an hour' (unbounded) and *yarım saatte* 'in half an hour' (bounded) respectively, in addition to the 'Position' adverbial *dün* 'yesterday.'

(15) a. **[Dün]** sahil-e var-dı. (achievement)
yesterday shore-DAT reach-PRF
'S/he arrived at the shore yesterday.'

a'. ....[A.........TS.............].............. **(Pattern III)**

b. **[Dün [konser-in tam orta-sı-nda]]** öksür-dü. (semelfactive)
yesterday concert-GEN exactly middle-3sg-LOC cough-PRF
'S/he coughed right in the middle of the concert yesterday.'

c. [$_{A1}$ **Dün** [$_{A2}$ **bir saat]]** yüz-dü. (activity)
yesterday one hour swim-PRF
'S/he swam for an hour yesterday.'

c'. ....[$_{A1}$........[$_{A2/TS}$____]..........]........ **(P I embedded in P III)**

d. [$_{A1}$ **Dün** [$_{A2}$ **yarım saat-te]]** sahil-e yürü-dü. (accomplishment)
yesterday half hour-LOC shore-DAT walk-PRF
'Yesterday s/he walked to the shore in half an hour.'

There are two points to notice here: (i) the embedding of overlap patterns among TS, A1 and A2 as schematized in (15c') and (ii) the referential information rendered in A1 (*dün*) as opposed to the lack thereof in A2 (*bir saat, yarım saatte*). In effect, in (15c-c'), TS totally overlaps with A2, i.e. Pattern I, but at the same time it has a Pattern III relation with A1. In other words, TS and A2 are properly included in the "frame" provided by A1 (*dün*). It will be argued that this is due to the lack of referential information in the 'Scalar Quantity' adverbs, in contrast to *dün* 'yesterday' which explicitly specifies the relation of TS and TU, i.e. deictic reference.

As for statives, it is observed that the overlap pattern between the stage-level stative in (16a-b) and the adverb *dün* 'yesterday' depends on the context. In (16a) the situation is asserted to hold within A, i.e. Pattern III, while in (16b) TS holds continuously throughout A, thus exhibiting a Pattern I overlap relation. The individual-level stative in (16c) is infelicitous with the 'Position' adverb *dün* 'yesterday,' unless the predicate is understood to refer to the post rather than the profession.

(16)   a. [**Dün**] hasta-ydı ama [**bugün**] iyi. (Pattern III)
yesterday sick-PRF but today fine
'S/he was sick yesterday but is fine today.'

b. [**Dün**] hastaydı, hatta [**gün-ler-dir**] hasta. (Pattern I)
yesterday sick-PRF in fact day-PL-DIr sick
'S/he was sick yesterday, in fact, s/he has been sick for days now.'

c. ??[**Dün**] doktor-du ama [**bugün**] değil çünkü istifa et-ti. (Pattern III)
yesterday doctor-PRF but today not because resign-PRF
'S/he was a doctor yesterday but not today because s/he resigned.'

With respect to viewpoints, Pattern III seems most felicitous with the perfective. As was illustrated above, mostly Position adverbs establish Pattern III. This is only expected, as these adverbs specify the temporal ground for a situation, i.e. location of TS within a "frame," and the perfective takes situations as atomic wholes that contrast with the ground. Interestingly, Pattern III is also established in Existential Perfect (EP) (cf. Chapter 4, also Iatridou's (2002:54) analysis of EP as temporal existentials).

Pattern IV, the inclusion of TS in A or vice versa is illustrated in (17-18) below. Pattern IV is different from proper inclusion in Pattern II and III because this is a case of intersection between two intervals, such that both intervals have subparts that do _not_ overlap with each other. In (17b) the final endpoint of TS overlaps with the (implicit) Left Boundary (LB) of A, while in (18b) the initial endpoint of TS overlaps with the (implicit) RB of A. Note that both intervals have subparts that do not overlap with each other.

(17)   a. Havuz-u **az önce/daha yeni/henüz** doldur-du/-muş. (accomplishment)
pool-ACC a short while ago/recently/just fill-PRF/PERF-1sg
'S/he has just filled the pool.'

b. .....[TS ᵢ____[ₐ ₗ_B/TS ᵣ]____]PO..........

(18)   a. Motor **az sonra/şimdi/hemen** çalış-acak. (activity)
engine in a short while/now/soon work-FUT-3sg
'The engine is about to start working//will soon start to work.'

b. ...PO[A$_{LB}$_____A$_{RB}$/[TS $_i$]_____TS$_f$]...

In Pattern IV, which seems to occur only with perfect of recent past and present prospective, the overlap relation between A and TS is dependent on durativity, i.e. both the situation and the adverbial must be durative. In the perfect of recent past, with the accomplishment in (17a), the situation is understood to have been completed, i.e. the pool is full. This means that the change of state/the set terminal point of TS overlaps with the LB of A, as schematized in (17b). Note that the adverbial interval stretches until the PO, i.e. TU in (17b). As for the present prospective activity in (18a), there is focus on the initial endpoint of the situation, which coincides with the RB of A, as schematized in (18b). The remaining temporal span of these situations are only implicit.

OVERLAP RELATIONS: FRAME (A & TS) & VIEWPOINT (TT & TS)	
Total overlap (equality)	Pattern I: **A/TS**, also UP: **A/TS**
........X/Y..........	Perfective: **TT/TS**
Partial overlap (proper inclusion)	Pattern II: **A in TS**
(1) .....[x....Y.....]......	Imperfective: **TT in TS**
Partial overlap (proper inclusion)	Pattern III: **TS in A**; also EP: **TS in A**
(2) ......[Y....X.....]......	Russian perfective: **TS in TT** (Klein et al. (2000))
Partial overlap (inclusion)	Pattern IV: **A intersects with TS**; also Perfect of
...[X...{Y___]....}....	recent past, Present prospective with [+dur] STs
	---

Table 6.3: **Analogous overlap patterns in lexical (adverbials) and grammatical (viewpoints and perfect constructions) expressions of aspect**

To sum up, Pattern I in (11-12) is argued to be the adverbial analogue of the relation between TS and TT in perfective aspect and that between A and TS in universal perfect (UP). The relation between TS and A in Pattern II in (13-14) is analogous to that between TS and TT in imperfective viewpoint. As for Pattern III in (15-16), the

inclusion relation is conspicuously similar to the relation between A and TS in existential perfect (EP) (cf. Chapter 4, and § 6.3 below). As for Pattern IV, it is restricted to perfect of recent past and present prospective, which are extended interpretations of the perfective. Therefore, the perfective seems to be the default viewpoint for Pattern IV (cf. **Table 6.3**).

6.3. Quantity Adverbials

It is argued that Quantity adverbials are labels for temporal intervals that measure situations in time. This idea is based on three assumptions: (i) the nature of physical quantities in general, (ii) the necessity of (end)points in measuring distance/duration and (iii) the quantificational nature of time.

Generally speaking, there are two types of quantities: i. scalar and ii. vector (cf. Bueche (1983)).[10] A scalar quantity has only magnitude, while a vector quantity has both magnitude and direction. Typical examples of 'scalar' quantities are mass and count objects which may be quantified, e.g. the number of children at a playground (count object) and the amount of water in a glass (mass object), etc. As for 'vector' quantity, a change in position from one point to another point at some distance and in the x-direction from the starting point is a vector displacement. For example, a trip from Istanbul to Ankara involves not only distance but also direction (cf. § 6.3.2.).

Like any scalar quantity, time is a measurable entity and can be quantized. Time can be measured and quantized by means of units of time like *saat* 'hour,' *dakika* 'minute,' etc., as was exemplified in (2-10) above. In other words, adverbs are used to delimit the mass of time, just like measure phrases or classifiers are used to delimit mass objects, e.g. *a glass of beer* (cf. Krifka (1989)). This parallelism between nominal and temporal domains, i.e. quantized reference to all mass objects including time, is

illustrated in (19a-b). The only difference between (19a) and (19b) is that the word

"time" is omitted in (19b), as 'an hour' is specifically used to measure time, whereas 'a

cup' can be filled with other mass objects, e.g. coffee, milk, etc. as well as count objects,

e.g. sugar lumps.

(19)   a. iki fincan çay   quantized reference to mass object
        two cup tea
        'two cups of tea'

        b. iki saat (zaman)   quantized reference to mass of time
        two hour (time)
        'two hours'

In sum, endpoints/points of orientation are essential in measuring a distance or

showing a direction, because two points are required to measure a distance. In that

respect, establishing the endpoints of a situation, either independently (through

adverbials) or implicitly (through viewpoint morphology) is a prerequisite for a situation

to be measured. In effect, situations are noted to "take place in time and take time to

obtain" (cf. Bull (1971)). Accordingly, it will be argued that Scalar Quantity adverbials

measure the time taken up by situations in terms of the distance in time between their

initial and final endpoints. As for the direction in a vector quantity, it will be argued that

Vector Quantity adverbs are characterized by "a change of state" with respect to which

the direction of the situation is determined (cf. § 6.3.2.).

6.3.1. Scalar Quantity Adverbials (SQAs)

Two types of scalar quantity adverbials (henceforth SQA) are distinguished: (i)

the SQAs that measure a single instance of a situation and (ii) those that measure

multiple instances of a situation (cf. Table 6.4 below). SQAs answer questions like:

'How long?,' 'How often?' and 'How many times?' (cf. quantificational aspect Dik

(1989), Hengeveld (1989)).

SINGLE INSTANCE		MULTIPLE INSTANCES			
[-bounded]	[+bounded]	cardinal	ordinal	frequency	
				specified	unspecified
iki saat (for two hours)	iki saatte (in two hours)	iki defa (twice)	ilk defa (for the first time)	haftada bir (once a week)	sık sık (frequently)

Table 6.4: Scalar Quantity Adverbials (SQA) in Turkish

6.3.1.1. Single Instance SQAS

There are two subcategories of SQAs measuring a single instance of a situation: (i) unbounded duration (cf. 'simple duration' (Smith (1997) and 'measure adverbials' (Krifka (1989)) and (ii) bounded duration (cf. 'completive duration' (Smith (1997)) and 'interval adverbials' (Krifka (1989))). Unbounded duration SQAs (*for an hour* adverbs) are illustrated in (20-21) below.

(20)   a. [A1 **Bu gece** en az [A2 **sekiz saat**]] uyu-r.(activity)
         tonight at least eight hour sleep-AOR-3sg
         'S/he'll sleep at least for eight hours tonight.'

       a'. ....TU.....[A1....[A2/TS/TT_____]...]...... (P I: A2/TS, PIII: TS in A1)

       b. En az [A2 **sekiz saat**] uyu-r.(activity)
          at least eight hour sleep-AOR-3sg
          'S/he sleeps at least for eight hours.'

In (20a-b) the activity totally overlaps with *sekiz saat* 'eight hours' (A2), i.e. an unbounded duration SQA, and establishes a Pattern I overlap relation. In addition, both A2 and TS are included in the Position adverbial *bu gece* 'tonight' (A1), thus establishing a Pattern III relation. Note that the Quantity adverb (A2) does not contain referential information, but the Position adverb (A1) *bu gece* 'tonight' triggers a future perfective reading in (20a). Without the Position adverb, the preferable reading of – *Ar/Ir* in (20b) would be the habitual meaning rather than the future perfective in (20a).

Unbounded duration SQAs are observed to require atelic and durative STs (cf.

Erguvanlı-Taylan (2001))[11] and exhibit a Pattern I overlap relation. Other Turkish adverbs that belong to this subcategory are exemplified in (21). In (21a) a stage-level stative exhibits a Pattern I relation with the unbounded duration SQAs, namely *iki saat boyunca/saatlerce* 'for two hours/for hours.' Interestingly enough, the activities in (21b-c) do not homogeneously hold throughout the adverbial intervals, i.e. *konferans boyunca* 'during the conference' and *kamp süresince* 'during the camp period.' For example, there may have been moments of awakedness in (21b) and a number of meetings have taken place in (21c), but the point is that A2 is characterized by that activity.

(21) a. **İki saat boyunca/saat-ler-ce** oda-m-da-yım. (Pattern I:A/TS)
      two hour throughout/ hour-PL-DERIV room-1sg-LOC-1sg
      'I'm in my room for two hours/for hours.'

      b. **Konferans boyunca**[12] uyukla-dı-k. (Pattern I: A/TS)
      conference throughout doze-PRF-1pl
      'We dozed the conference away.'

      c. [A1 **Geçen yaz** [A2 **kamp süre-si-nce**]] görüş-tü-k.
      last summer camp duration-3sg-during meet-PRF-1pl
      'We saw one another during the camp last summer.'

Bounded duration SQAs (*in an hour* adverbs) measure a single instance of a situation and are most felicitous with telic events. In fact, achievements overlap with the RB of the adverb as in (22a) and the preliminary activities of accomplishments totally overlap with the adverb and the event culminates at the RB of the adverb, as illustrated in (22b).

(22) a. Adres-i **iki saat-te** bul-du-k. (achievement)
      address-ACC two hour-LOC find-PRF-1pl
      'It took us two hours to find the address.'

      a'. ....[A____TS/TT].........TU........ (P III: TS in A)

      b. Tablo-yu **iki ay-da** tamamla-dı. (accomplishment)
      picture-ACC two month-LOC complete-PRF-3sg
      'S/he completed the picture in two months.'

b'. ....A/TS/TT............ (P I: TS/A)

Another bounded duration SQA measuring a single instance, namely *iki ay içinde* 'within two months,' appears in (23a-b) below. The interpretation of the adverbial depends on the T/A marker in the sentence. In (23a) the future marker causes the adverbial to represent the maximal amount of time that the accomplishment can take. In other words, the event will have been completed by the end of two months, even though the actual painting activity may not take the entire two-month period, i.e. Pattern III. On the other hand, in (23b), the perfective marker with its completion implication triggers a reading where the activity part of the accomplishment totally overlaps with A and the STP of the accomplishment also overlaps with the RB of A, thus exhibiting a Pattern I relation.

(23) a. Tablo-yu **iki ay iç-i-nde** tamamla-yacak. (accomplishment)
picture-ACC two month inside-3sg-LOC complete-FUT-3sg
'S/he'll complete (will have completed) the picture within two months.'

a'. .....TU......[A___TS/TT____].......... (P III: TS in A)

b. Tablo-yu **iki ay iç-i-nde** tamamla-dı. (accomplishment)
picture-ACC two month inside-3sg-LOC complete-PRF-3sg
'S/he completed the picture within two months.'

b'. ....[A/TS/TT_____].........TU.. (P I: TS/A)

6.3.1.2. Multiple Instance SQAS

SQAs measuring multiple instances of a situation are those adverbs that implicitly or explicitly specify how many times a situation takes place within a given temporal span. This amounts to taking individual situations as count objects and quantizing them. In that respect, they differ from SQAs that measure the duration of a single situation. Furthermore, they can be considered "deficient" adverbials composed of a quantificational operator and an implicit or explicit inclusive temporal span. Three

subcategories of SQAs measuring multiple instances of a situation are distinguished on the basis of the quantificational operator: (i) adverbs involving cardinal numbers, (ii) those involving ordinal numbers and (iii) frequency adverbs. Frequency adverbs are further subdivided into (i) specified frequency adverbs and (ii) unspecified frequency adverbs.

SQAs involving cardinal numbers are illustrated in (24a-e) below. In (24a) the phone rings twice within the "frame" provided by the Position adverb. The cardinal number represented by Q in (24a-e) merely takes each instance of the situation as a whole and quantizes them within the specified temporal span, i.e. A.

(24)   a. Telefon [A **yarım saat önce** [Q **iki kere/defa/kez**]] çal-dı. (semelfactive)
        telephone half hour before two times ring-PRF-3sg
        'The phone rang twice half an hour ago.'

        a'. ....[A_____TS___TS___]...........(Pattern III: TSs in A1)

        b. Süreyya [A **geçen sene** [Q **üç defa**]] şampiyon ol-du. (achievement)
        Süreyya last year three times champion become-PRF-3sg
        'Süreyya became the champion three times last year.'

        c. *Ayça [A **Kasım'da** [Q **dört defa**]] bir kazak ör-dü. (accomplishment)
        Ayça in November four times one pullover knit-PRF-3sg
        '*Ayça knitted a pullover four times in November.'

        c'. Ayça **Kasım'da** dört kazak ör-dü. (accomplishment)
        Ayça in November four pullover knit-PRF-3sg
        'Ayça knitted four pullovers in November.'

        d. Müge [A **Aralık'ta** [Q **üç defa**]] yüz-dü. (activity)
        Müge in December three times swim-PRF-3sg
        'Müge swam three times in December.'

        e. Müge [A **Aralık'ta** [Q **üç defa**]] *hasta-ydı. (stative)
        Müge in December three times sick-PRF-3sg
        '*Müge was sick three times in December.'

This behavior of cardinal number SQAs has two implications concerning STs and overlap patterns. Firstly, momentaneous situations and/or those situations that can

be iterated are expected to be felicitious with these adverbs. As predicted, the achievement in (24b) is grammatical. The durative activity in (24d) has a similar atomic reading, though the duration of the individual instances is left implicit. On the other hand, the stative in (24e) is not grammatical, as it cannot be iterated. The behavior of the accomplishment in (24c) is also interesting in that the totally affected object[13] cannot undergo the same event a number of times, therefore (24c) is ungrammatical. The only way to get the intended iterative reading would be to quantize the affected object rather than the event itself, as in (24c'). Secondly, SQAs involving cardinal numbers exhibit a Pattern III overlap, i.e. multiple instances of the situation are contained in the temporal frame provided by A1, as in (24a'). In fact, this will be shown to be the case for the other two classes of multiple instance SQAs as well. As the cardinal numbers specifying those individual instances are not temporal intervals, they cannot establish an overlap relation with TSs.

SQAs involving ordinal numbers involve a temporal span within which the individual instances of a situation hold, as illustrated in (25) below. The interesting point to notice is that in (25a) and (25c-e) this span is provided by a vector quantity adverbial (cf. § 6.3.2. below), whose RB overlaps with the last instance of the situation, as schematized in (25a') and (25c'). What is common in those "vector quantity" adverbs is that they all specify a Left Boundary (LB) starting from which the individual instances of the situation are quantized.

(25) a. [A Yıl-lar-dır [Q ilk defa]] görüş-üyor-lar/görüş-tü-ler. (activity)
       year-PL-DIr first time meet-IMPRF-3pl/meet-PRF-3pl
       'This is the first time they have met in years.'

      a'. ....[A_____TS]............ (Pattern III: TS in A)

b. Telefon [A **son yarım saat içinde** [Q **ikinci defa**]] çal-ıyor/çal-dı. (semelf.)
telephone last half hour within second time ring-IMPRF-3sg/ring-PRF-3sg
'This is the second time the phone has rung within the past half hour.'

c. Can [A **geçen sene-den beri** [Q **üçüncü kez**]] burada. (stative)
Can last year-ABL since third time here-3sg
'This is third time Can has been here since last year.'

c'. ......[A_____TS___TS__TS]....... (Pattern III: TSs in A)

d. Nil [A **uzun zaman-dır** [Q **ilk defa**]] bir kazak ör-üyor./ör-dü. (accompl.)
Nil long time-DIr first time one pullover knit-IMPRF-3sg/knit-PRF-3sg
'This is the first time Nil has knitted a pullover for a long time.'

e. Müge [A **dün-den beri** [Q **ikinci defa**]] bahs-i kazan-ıyor/kazan-dı (achie.)
Müge yesterday-ABL since second time bet-ACC win-IMPRF-3sg/win-PRF-3sg
'This is the second time Müge has won the bet since yesterday.'

Like (25a), the bounded SQA that specifies an implicit LB by the word *son* 'last'
in (25b) allows the time span to be anchored to TU. Also note that the predicates in
(25a-b) and (25 d-e), except for the stative with zero marking in (25c), are marked with
the general imperfective *–(I)yor*, which is essential to the Universal Perfect (UP) reading
in these sentences.[14] When the same examples in (25a-b) and (25d-e) are marked with
the perfective *–DI*, they obtain an Existential Perfect reading but the Frame pattern
remains the same. The only difference is that the last instance of TS no longer overlaps
with TU/the RB of A.

Frequency adverbs are illustrated in (26-27) below. In (26a), the specified
frequency adverb *haftada iki kere* 'twice a week' involves a cardinal number within a
span provided by the time word. There is a time span which refers to some periodical
time interval repeated cyclically and each cycle contains the specified number of
repeated instances of playing tennis, as schematized in (26a'). The adverb *gün aşırı*
'every other day' in (26e) is a lexicalized expression which does not involve a cardinal
number.

(26)   a. [A1 **Hafta-da iki kere**] tenis oyn-ar. (activity)
week-LOC two times tennis play-AOR-3sg
'S/he plays tennis twice a week.'

a'. .....[A1__TS__TS__]....[A1__TS__TS__]....... (Pattern III: TSs in A)

b. Telefon [A1 **her yarım saat-te bir**] çal-ıyor. (semelfactive)
telephone every half hour-LOC once ring-IMPRF-3sg
'The phone rings once every half hour.'

c. *Can [A1 **her sene üç kere**] burada. (stative)
Can every year three times here-3sg
'*Can is here three times every year.'

d. *Ayça [A1 **ay-da dört defa**] bir kazak ör-er. (accomplishment)
Ayça month-LOC four times one pullover knit-AOR-3sg
'*Ayça knits a pullover four times a month.'

d'. Ayça **ay-da** dört kazak ör-er. (accomplishment)
Ayça month-LOC four pullover knit-AOR-3sg
'Ayça knits four pullovers in a month.'

e. Müge **gün aşırı** bahs-i kazan-ıyor. (achievement)
Müge day over bet-ACC win-IMPRF-3sg
'Müge wins the bet every other day.'

As specified frequency adverbs include cardinal numbers, they behave similarly to the ones in (24a-d) above in their interaction of with STs. As can be predicted, while the achievement in (26e) and the semelfactive in (26b) are grammatical, the stative in (26c) is not. As for the accomplishment in (26d), (26d') seems to be the only way to save the structure, due to the reasons mentioned above for (24c-c').

Finally, as illustrated in (27a-e) below, there are a number of unspecified frequency adverbs which express various degrees of frequency. Although there is no overt adverb which establishes a temporal span within which the multiple instances of the situation obtain, the context and world knowledge suggest that this temporal span is all the time within the life span of the individual concerned. In other cases, a VQA like *1990'dan beri* 'since 1990' may also establish such a temporal span (cf. below).

(27) a. Sermin [A1 **genellikle**]] tenis oyn-ar. (activity)
generally play-AOR-3sg
'Sermin generally plays tennis.'

a'. ....[A1___TS__TS__TS__TS_].......... (Pattern III: TSs in A)

b. Telefon [A1 **sık sık**] çal-ıyor/çal-dı/çal-ar-dı. (semelfactive)
telephone frequently ring-IMPRF-3sg/ring-PRF-3sg/ring-AOR-PRF-3sg
'The phone frequently rings/rang/would ring frequently.'

c. Can [A1 **çoğunlukla**] burada. (stative)
Can usually here-3sg
'Can is usually here.'

d. Ayça [A1 **her zaman**] bir kazak ör-er/ör-dü. (accompl.→activity)
Ayça always one pullover knit-AOR-3sg/knit-PRF-3sg
'Ayça always knits/has always knitted some pullover.'

e. Müge [A1 **zaman zaman**] bahs-i kazan-ıyor/kazan-dı. (achievement)
Müge time time bet-ACC win-IMPRF-3sg/win-PRF-3sg
'Müge wins/won the bet from time to time.'

The most important point to notice here is that the number of individual iterated instances of the situation is not explicitly specified/quantized, i.e. not objectively measurable. This is analogous to cumulative reference to situations in (iterative) habitual/generic (cf. Chapter 4), as opposed to quantized reference to situations observed with SQAs involving cardinal and ordinal numbers in (24a-d) and (25a-e) above, in addition to specified frequency adverbs in (26a-e). The lack of quantized reference is also evident in the shift of the accomplishment into an activity in (27d). These facts suggest that the paralellism between the world of events and objects in terms of quantificational reference is also observed in the world of times and the lexical expressions of time.

To sum up, single situation SQAs and multiple instance SQAs only have temporal magnitude, i.e. duration. Single instance SQAs establish a total (Pattern I) or partial overlap (Pattern III) relation with the situation and give information about the

duration of the situation. They do not establish a reference relation with TU, leaving either Position adverbs or T/A morphology to compensate for the lack of referential information. On the other hand, multiple instance SQAs are more complex than single instance SQAs in that they involve a quantificational operator and an adverbial element that provides a temporal span. The multiple instances of a situation are contained within the temporal span provided by the adverbial element, i.e. Pattern III. However, being non-temporal, the quantificational operators do not overlap with the individual instances of the situation.

6.3.2. Vector Quantity Adverbials (VQAs)

It was mentioned that a vector quantity has both magnitude and direction as opposed to a scalar quantity, which lacks direction. In (28) below the infinite line is divided into units of equal magnitude/length. The arrow extends from $-\infty$ to $+\infty$ (direction) and measures four units. In other words, the length of the arrow is proportional to the magnitude of the vector quantity, while its direction is represented by the direction of the arrow.

(28) $-\infty$ ....|....|....|....|....|—|—|—|—|→|....|....|....|....|................ $+\infty$

Temporally speaking, a time interval has magnitude/duration. In addition, a time interval can be presented as having a direction as in the observing human metaphor (cf. Bull (1971), Fillmore (1997)). For an observing human at the deictic centre, time is considered to "flow from left to right," i.e. from the past towards the future.

It will be argued that Vector Quantity adverbials (henceforth VQAs) are those lexical expressions of boundedness that measure the duration of situations and also give implicit or explicit information about a change of state. Radical though it may seem at first to relate the notion of change of state to adverbs, VQAs seem to involve a transition

between a change of state and a continuing state. In (29a) below, a change of state marks the beginning of the on-going stage-level stative, going away from the centre (centrifugal), if the change of state is considered as the centre   As illustrated by the conjunct, the state of "being here" started in 2002 and has continued until 2004, i.e. the deictic centre, as schematized in (29b). The initial endpoint of the situation, i.e. 2002, is explicitly specified by the complement of the postposition –DAn beri.

(29)   a.(Şimdi **2004'te-yiz.**) **2002'den beri** burada-yız ama **2001'de** Roma'da-ydı-k.
       now 2004-LOC-1pl. 2002-ABL since here-1pl but 2001-LOC Rome-LOC-PRF-1pl
       '(We are in 2004 now). We've been here since 2002 but we were in Rome in 2001.'

   b. - ∞ ....|................|.............|——————|————→|..............|...............|..........+ ∞
            2000   2001   **2002**   2003   **2004**   2005

   c. ....**change of state**————→**PO**................   (centrifugal)

Similarly, in (30a) the state is understood to continue towards the prospective change of state (centripetal) marked by the complement of the postposition –A kadar. In other words, 2006 marks the final endpoint of the situation, as schematized in (30b). As can be seen (29b-30b), the infinite temporal axis is divided into subintervals of equal duration (magnitude), with the arrow extending from left to right (direction).[15] The magnitude of the passing time can be measured due to the explicitly specified boundaries (LB/RB).[16]

(30)   a.(Şimdi **2004'te-yiz.**) **2006'ya kadar** burada-yız, **2006'da** Roma'ya gid-iyor-uz.
       now 2004-LOC-1pl. 2006-DAT until here-1pl, 2006-LOC Rome-DAT go-IMPRF-1pl
       '(We are in 2004 now).We'll be here until 2006, and are going to Rome in 2006.'

   b. - ∞ ....|.................|..............|——————|————→|..............|...............|..........+ ∞
            2002   2003   **2004**   2005   **2006**   2007

   c. ....**PO**————→ **change of state**...............   (centripetal)

As can be seen, a change of state may already have been realized or still remain

unrealized at the given PO. In the former case, the "direction" denoted by the VQA is centrifugal, i.e. going away from the change of state that constitutes a Left Boundary (LB), as in (29c). In the latter case, the VQA denotes centripetal direction, i.e. going towards a potential change of state which marks a Right Boundary (RB), as in (30c) (cf. Demirdache & Uribe-Etxebarria (2000), (2001) for a different use of the same terms).

Note that VQAs bring together three notions: (i) duration/magnitude, (ii) direction away from/towards a change of state which is analogous to a **figure** in the centre of attention (cf. Talmy (2000a,b)) and (iii) independent boundaries. It will be observed that VQAs trigger perfect meaning (UP, EP, perfect of recent past or result). In fact, most of these adverbs are considered as "perfect-level" adverbs by Iatridou et al. (2000). Recall that perfect is semantically complex, bringing together a prior process, a change of state and a target state (cf. Chapter 5). It will be argued that VQAs are of similar semantic complexity since they express a change of state and an on-going state, in addition to establishing Frame.

VQAs are considered under two main subcategories, namely Realized Change of State adverbials and Unrealized Change of State adverbials. The former category members specify the Left Boundary (LB) of A (centrifugal direction), while the latter specify the Right Boundary (RB) of A (centripetal direction). Each subcategory is further subdivided into two types depending on whether the boundary is explicitly or implicitly specified (cf. Table 6.5). VQAs are those adverbs that answer the questions 'Since when?' and 'Until when?'

REALIZED CHANGE OF STATE (centrifugal direction)		UNREALIZED CHANGE OF STATE (centripetal direction)	
Explicit LB	**Implicit LB**	**Explicit RB**	**Implicit RB**
1990'dan beri, *-AlI beri, itibariyle* (since 1990, since Ving, as of ..)	artık, çoktandır, üç saattir, henüz vs. çoktan (from now on, for a long time, for the past 3 hours, just vs. already)	2005'e kadar, düne kadar (until 2005, until yesterday)	hâlâ, henüz/daha, az sonra, hemen (still, yet, soon, immediately)

Table 6.5: Vector Quantity Adverbials (VQA) in Turkish

6.3.2.1. Realized Change of state Adverbials (RCAs)

Realized change of state adverbials (henceforth RCAs) explicitly or implicitly specify a Left Boundary. They specify both the magnitude and centrifugal direction of an on-going state that results from a change of state. Phrasal adverbs composed of a postposition and its NP complement, e.g. *-DAn beri, -DAn bu yana* 'since,' *-DAn itibaren, -Ø itibariyle* 'as of,' explicitly specify a LB and provide referential information by means of the NP complement. On the other hand, lexicalized ones like *artık* 'from now on,' *çoktandır* 'for a long time now,' *henüz* 'just,' etc. implicitly specify the LB and are dependent on T/A morphology and context for temporal reference.

The postpositional structures *-DAn beri, -DAn bu yana* 'since,' are RCAs that explicitly specify a LB, as exemplified in (31-32) below. The complement of these postpositions may be a deictic element like *dün* in (31a-b), a clock-calendar word like *1999* in (32a), or a dependent Position adverb like *o gün* as in (32c). In (31a) a change of state which overlaps with LB of A has brought about the situation that has continued so far, i.e. Universal Perfect. As schematized in (31a'), TS and A totally overlap

(Pattern I) and the NP complement *dün* 'yesterday' establishes deictic reference with respect to TU.[17]

(31) a. **[Dün-den beri]** *öksür-dü./öksür-üyor. (semelf. → activity)
      yesterday-ABL since cough-PERF/cough-IMPERF
      'S/he *has coughed/has been coughing since yesterday.'

      a'. ....[A/TS_____TU/TT]...............

      b. [A1 **Dün-den beri [üç defa]]** öksür-dü/*öksür-üyor. (semelfactive)
      yesterday-ABL since three times cough-PERF-3sg/*cough-IMPRF-3sg
      'S/he has coughed/*is/has been coughing three times since yesterday.'

(32) a. **[1999'dan beri]** yarışma-yı *kazan-dı./kazan-ıyor. (achiev. → iterative)
      1999-ABL since contest-ACC win-PERF/win-IMPERF
      'S/he *has won/has been winning the contest since 1999.'

      b. **[Salı'dan bu yan-a]** musluğ-u *tamir et-ti./ed-iyor (accomp.→ activity)
      Tuesday-ABL this side-DAT tap-ACC fix-PERF./fix-IMPERF
      'S/he *has fixed/has been fixing the tap since Tuesday.'

      c. **[O gün-den beri]** su-lar yok-tu/yok. (state)
      that day-ABL since water-PL absent-PRF/absent
      'There was/is no water since that day.'

Note that the perfective marker is ungrammatical in (31a) and (32a-b) because it is incompatible with the durativity inherent in the adverb. As the perfective makes atomic reference to situations, it is felicitous with the same adverb as long as the individual instances of the situation are specified, as illustrated in (31b). In fact, *üç defa* 'three times' constitutes a multiple instance SQA involving a cardinal number. The imperfective marker *–(I)yor* co-occurring with *–DAn beri* causes the achievement in (32a) to get an iterative reading, while the accomplishment in (32b) and the semelfactive in (31a) obtain an activity reading.

Although the perfective is ungrammatical in (31a) above, negative polarity seems to affect the acceptability of the structure, as in (33a) (cf. Erguvanlı-Taylan (2001)). In fact, both (33a-b) denote an adverbial interval which is free of any coughing event (cf.

Iatridou (2002) for an analysis of perfect sentences as temporal existentials). The "no-cough" situation extends to TU but may/may not continue after TU (cf. Smith (1997: 188, ex. 50)). In that respect, it is possible to have open or closed readings with *since*.

(33)   a. **Sabah-tan beri** öksür-me-di. (closed, perfective, EP)
morning-ABL since cough-NEG-PRF
'S/he has not coughed since morning.

   b. '**Sabah-tan beri** öksür-mü-yor. (open, imperfective, UP)
morning-ABL since cough-NEG-IMPRF
'S/he has not been coughing since morning.'

There is another means to express an explicit LB. In (34a), the *–AlI* morpheme on the embedded predicate marks another situation, i.e. the achievement of meeting with Li, as the change of state that constitutes the initial endpoint of the activity of learning Chinese. This is also the LB of the temporal interval within or throughout which the situation holds. In other words, the situation may totally or partially overlap with the adverb depending on the T/A morphology on the predicate, thus establishing Frame. (cf. Musan (2001a) *seit*-adverbials). The imperfective marker *–(I)yor* is grammatical and allows a total overlap between the activity in (34a) and the adverbial.

(34)   a. [**Li'yle tanış-alı (beri)**] Çince *öğren-di./öğren-iyor. (activity)
Li-COM meet-AlI (since) Chinese learn-PERF/learn-IMPERF
'S/he *has learnt/has been learning Chinese since s/he met Li.'

   b. Berna [**Li'yle görüş-me-yeli** [AI **iki ay**]] ol-du./ol-uyor.
Berna Li-COM meet-NEG-AlI two month become-PERF/become-IMPERF
'It has been two months since Berna saw Li.'

   c. ....TS[$_A$_____]...................

The behavior of the *–AlI* structure with the negative marker is similar to those of (33a-b) above. In (34b), the *–AlI* predicate co-occurs with a single instance SQA, namely *iki ay* 'two months.' TS (the last meeting with Li) overlaps with the LB of the two-month state (AI), which is free of any 'seeing Li' events, as schematized in (34c).

The most interesting point to notice in (34b) is the use of the auxiliary *ol-*, whose function as a lexical marker of change of state was emphasized (cf. periphrastic constructions in Chapter 4). This seems to further support our idea that VQAs inherently involve a change of state.

When it comes to RCAs that implicitly specify a LB, there are a number of adverbials expressions such as *oldum olası* 'always' in (36a), *hep* 'always' in (36b), *çoktandır* 'for a long time now' in (37a-b), cardinal number + time unit-*DIr*, e.g. *üç saattir* 'for three hours now,' in (38a-b), *henüz* 'just' in (39), *çoktan* 'already' in (40) and *artık* 'from now/then on' in (41).

To start with, the adverbs in (36a-b) denote that the state of not liking physics or wanting to become a chemist has started at an implicit prior point and continued until TU/PO. Note that this is Universal Perfect. A similarly unspecified (implicit) anterior LB marks the initial endpoint of the situations in (37a-b). Although the duration (magnitude) of the adverbial interval in (37a-b) is not specified, it is understood to be subjectively long. It is also possible to use time units marked with the plural marker – *lAr* and the –*DIr* to express a similar unspecified quantity of time, as in (37c). In (37a) the stative continues homogeneously starting from the implicit LB until TU/PO. In other words, it totally overlaps with A, as schematized in (37a'). With the negative predicate in (37b), the adverbial interval is understood to have been free of any events of going to Ankara (cf. Iatridou (2002)).

(36)   a. Hacer oldum olası fiziğ-i sev-me-z/sev-me-miş-tir. (stative)
       Hacer always physics-ACC like-NEG-AOR/like-NEG-PERF-EVID
       'Hacer has always disliked physics.'

       b. Hacer hep kimyacı olmak iste-miş-tir. (stative)
       Hacer always chemist become want-PERF-EVID
       'Hacer has always wanted to become a chemist.'

(37)   a. **Çoktan-dır** bil-iyor-um. (stative)
         for a long time now know-IMPRF-1sg
         'I've known (it) for a long time.'

         a'. ....[A/TS_____]TU/PO..........

         b. **Çoktan-dır** Ankara'ya git-me-di-m. (achievement)
         for a long time now Ankara-DAT go-NEG-PRF-1sg
         'I haven't been to Ankara for a long time.'

         c. **Yıl-lar-dır/ay-lar-dır/saat-ler-dir** bu mektub-u yaz-ıyor-um. (activity)
         year-PL-DIr/month-PL-DIr/hour-PL-DIr this letter-ACC write-IMPRF-1sg
         'I have been writing this letter for years/months/hours now.'

It seems that a continuative UP reading is the natural interpretation of these

adverbs in (37a-c). This is the case for the structures in (38a-b) as well. As a result,

durative STs like activities and statives are acceptable as in (38a), while momentaneous

STs, e.g. the achievement in (38b), are ungrammatical even if the individual instances of

the situation are explicitly specified by adverbs. The adverbs in (38a-b) differ from

those in (37a-c) only in that the duration (magnitude) of the interval is specified by

explicitly quantized time units. The *–DIr* marker can also appear with an ordinal

number, e.g. *beşinci defa-dır*, as in (38c) and indicate the n-th time the situation has been

repeated over the implicit temporal span.

(38)   a. **Üç saat-tir/iki gün-dür** bekli-yor-um./burada-yım. (activity/stative)
         three hour-DIr/two day-DIr wait-IMPRF-1sg/here-1sg
         'I've been waiting /I've been here for three hours/two days now.'

         a'. ....l..........[A/TSl——─l——─l──→TU/PO......l..........l......

         b. [A1 İki yıl-dır [A2 üç defa]] *karşılaş-tı-k/*karşılaş-ıyor-uz. (*achievement)
         two year-DIR three times come across-PERF-1pl/come across-IMPRF-1pl
         '*We have met three times for two years now.'

         c. **Beş-inci defa-dır** ar-ıyor-um (ama telefon-u aç-m-ıyor).
         five-IncI time-DIr call-IMPERF-1sg but phone-ACC open-NEG-IMPERF
         'This is the fifth time I've called but s/he won't answer the phone.'

There are two other RCAs that specify an implicit LB, namely *henüz* 'just' and

çoktan 'already' in (39-40) below. These differ from the above mentioned expressions in that the non-durative situation itself constitutes the change of state that overlaps with the LB of the durative adverbial interval. The duration of the adverbial interval is not objectively measurable. While *henüz* in (39a) refers to an unspecified short interval, *çoktan* in (40a) denotes that the LB of the adverbial interval is subjectively "far" from TU/PO.

(39) a. Ali gezi-den **henüz** vazgeç-ti./*vazgeç-iyor. (achievement)
Ali trip-ABL just give up the idea-PRF/*give up-IMPERF
'Ali has just given up the idea of going on the trip.'

a'. ......TS[A___TU/PO..........

b. Ali zil-i **henüz** çal-dı./*çal-ıyor. (semelfactive)
Ali bell-ACC just ring-PRF/*ring-IMPERF
'Ali has just rung the bell.'

c. Ali elma-yı **henüz** ye-di./*yi-yor. (accomplishment)
Ali apple-ACC just eat-PRF/*eat-IMPERF
'Ali has just eaten the apple.'

c'. ....[TS_____TS$_f$/A$_{LB}$]_____.................

(40) a. Ali gezi-den **çoktan** vazgeç-ti. (achievement)
Ali trip-ABL already give up the idea-PRF
'Ali has already given up the idea of going on the trip.'

a'. ......TS/[A_____]TU/PO..........

b. Ali **çoktan** yüz-dü. (activity)
Ali already swim-PRF
'Ali has already swum.'

Note that in both (39a-40a) the LB overlapping with the situation/change of state is anterior to TU/PO. In fact, these adverbs trigger a perfect of recent past meaning. Interestingly enough, the adverb in (39a-c) is not acceptable with the imperfective marker, unless the situations can be shifted to atelicity. Moreover, in (39c) it is the final endpoint/the STP of the durative accomplishment rather than its preliminary activity that

overlaps with the LB of the adverbial interval (Pattern IV).

Looking at the behavior of *çoktan* in (40a-b), it may be argued that it is the non-durative Existential Perfect counterpart of *çoktandır* above. The LB of *çoktandır* is the initial endpoint of a durative ST expressing UP, while the LB of *çoktan* overlaps with the final endpoint of the situation. Interestingly, the results/target state of the situations in (39-40) continue throughout the adverbial interval. For example, in (39a) and (40a) there will be no trip for Ali. In (39c) the apple does not exist anymore, while in (40b) Ali might be tired now. This behavior suggests that the complex meaning in perfect that combines process and result is lexically expressed in terms of RCAs that bring together an anterior change of state and an on-going target state.

Finally, we focus on *artık* which inherently specifies that a change of state has occurred and a target state holds. The difference of *artık* from the rest of the RCAs above is that the change of state/LB overlaps with TU/PO and the target state starts following this LB. In other words, the unspecified durative interval is posterior to TU/PO. (41a-e) below illustrates the interaction of *artık* with STs. As can be predicted, statives in (41a) are acceptable. There is an implicit change of state that has resulted in the currently relevant target state, which is assumed to continue towards the future unless otherwise specified. The activity in (41b) gets an ingressive reading due to the implicit change of state. As for the semelfactive in (41c), it is understood that some change has occurred as to result in Erinç's (being capable of) sneezing.

(41)   a. Erinç artık ekran-da./uzun boylu. (stage-level/individual-level stative)
       Erinç now screen-LOC/tall
       'Erinç is now on the screen./tall.

       b. Erinç artık yüz-dü./yüz-üyor. (activity)
       Erinç now swim-PRF/swim-IMPRF
       'Erinç has managed to swim/can swim now.'

c. Erinç **artık** hapşır-dı./hapşır-ıyor. (semelfactive)
Erinç now sneeze-PRF/sneeze-IMPRF
'Erinç has sneezed/sneezes now.'

d. Erinç **artık** ev-e var-dı./*var-ıyor. (achievement)
Erinç now home-DAT arrive-PRF/arrive-IMPRF
'Erinç has arrived/*is arriving at home now.'

e. Erinç **artık** okul-a *yürü-dü./yürü-yor. (accomplishment→activity)
Erinç now school-DAT walk-PRF/walk-IMPRF
'Erinç *has walked/walks to school now.'

e'. Erinç **artık** Çince'yi iyice öğren-di./(*iyice) öğren-iyor. (accomplishment)
Erinç now Chinese-ACC well learn-PRF/learn-IMPRF
'Erinç has learnt Chinese well/*is learning Chinese now.'

As for the telic STs, the achievement in (41d) is not grammatical with the imperfective marker, as it does not involve a prior process. Nor can it be iterated. With the perfective marker, there is more focus on the change of state rather than the implicit target state in (41d). The accomplishment in (41e) is ungrammatical with the perfective and gets an activity reading with the imperfective marker. On the other hand, (41e') is grammatical with –DI because a certain level of knowledge has been reached, as illustrated by the felicity of iyice 'well.' In (41e) the subject cannot be assigned the participant property because there is no resultant state or a target state. In (41e') the subject can bear the property of having learnt Chinese properly, which can continue throughout the prospective adverbial interval.

(42)   a. Artık bekle-me-yeceğ-im.
        from now on wait-NEG-FUT-1sg
        'I'm not going to wait any longer.'

        a'. ......[TS················[A]TU_____]······   (P IV: TS intersects with LB of A)

        b. Artık bil-iyor-um.
        from now on know-IMPRF-1sg
        'Now I know (it.)'

        b'. ....[A/TsTU_____]·····················   (P I: TS/A)

Time-relationally, it is also interesting to note that (42a) is distinct from (42b). In (42a) the prior situation finishes at the implicit LB provided by *artık*. Following this change of state, there will be a state of not-waiting, as schematized in (42a'). On the other hand, in (42b) the state of knowing has started at the LB/change of state denoted by *artık*. In sum, there is a Pattern IV relation in (42a), while in (42b) it is Pattern I, i.e. total overlap of TS and A.

6.3.2.2. Unrealized Change of state Adverbials (UCAs)

Unrealized change of state adverbials (henceforth UCAs) explicitly or implicitly specify a Right Boundary (RB). Postpositional UCAs specify an explicit RB by means of their complement and establish an overlap relation with the situation. In this way they specify both the magnitude and centripetal direction of the temporal interval, as well as establishing Frame. On the other hand, those UCAs that do not involve a complement specify an implicit RB and are directly anchored to TU/PO.

The postpositions *–A kadar/dek/değin* 'until' constitute the typical UCAs that specify an explicit RB, i.e. the final endpoint of the adverbial interval. This RB represented by the complement of the postposition marks the change of state that characterizes the UCA. The NP complements can express anteriority or posteriority with respect to TU/PO, as long as they are compatible with the T/A morphology in the sentence. For example, *düne kadar* 'until yesterday' in (43a) is not grammatical with the present imperfective *–(I)yor*, whereas the past perfective *–DI* is not acceptable with posterior complements, e.g. *2005'e dek* in (43b). With clock-calendar words such as *Salı* in (43e), the interpretation is context-bound, allowing both an anterior or posterior reading.

(43) a. **[Dün-e kadar]** öksür-dü./*öksür-üyor./öksür-üyor-du. (semelfactive)
yesterday-DAT until cough-PERF/cough-IMPERF/cough-IMPERF-PRF
'He has coughed/*has been coughing/had been coughing until yesterday.'

b. **[2005'e dek]** Çince *öğren-di./?öğren-iyor./öğren-ecek. (activity)
2005-DAT until Chinese learn-PERF/learn-IMPERF/learn-FUT
'He *has learnt/?is learning/will have learnt Chinese until 2005.'

c.**[O gün-e değin]** yarışma-yı kazan-dı/*kazan-ıyor/kazan-acak. (achievement)
that day-DAT until contest-ACC win-PERF/win-IMPERF
'He *has won/*is winning/will have won the contest until that day.'

d. **[O gün-e değin]** su-lar yok-tu/yok./ol-ma-yacak. (state)
that day-DAT until water-PL absent-PRF/absent/be-NEG-FUT
'There was/will be no water until that day.'

e. **[Salı'ya kadar]** musluğ-u tamir et-ti./*ed-iyor/ed-ecek. (accomplishment)
Tuesday-DAT until tap-ACC fix-PERF./fix-IMPERF/fix-FUT
'He has fixed/*is fixing/will have fixed the tap until Tuesday.'

As for the interaction of *–A kadar* expressions with STs, it is observed that the viewpoint markers affect the interpretation. In (43a) the semelfactive is shifted to derived activity both with the *–DI* and *-(I)yor-DI* since the adverbial interval stretches from the point of reference until the RB. Moreover, completion by the RB seems to be required as illustrated by the acceptability in the achievement in (43c) and the accomplishment in (43e). In fact, the activity marked with *–AcAK* in (43b) can be construed as an accomplishment which is completed by the RB of the adverbial interval.

When it comes to those UCAs that specify an implicit RB, the synonymous *henüz/daha* 'yet' in (45a), proximity adverbs such as *yakında, az sonra, and hemen* 'soon, in a short while, immediately' in (46a) and *hâlâ* 'still' in (47a-e) are the typical expressions. The most important feature of *henüz/daha* is that they appear in negative sentences where a possible change of state is implied. As will be clear from (45a), the RB coincides with TU (with a present perfect reading in *–DI*) or some PO (with the past perfect reading in *–mIş-DI*). The 'out of order' state of the TV set is understood to

continue until the expected change of state, i.e. the TV set being repaired, takes place. Once the prospective change of state occurs, the currently relevant state will come to an end, i.e. the final endpoint of the state will overlap with the unrealized change of state at TU/PO, as schematized in (45a').

(45) a. Televizyon **henüz/daha** onar-ıl-ma-dı./onar-ıl-ma-mış-tı.
TV yet/yet fix-PASS-NEG-PRF-3sg./fix-PASS-NEG-PERF-PRF-3sg.
'The TV set has/had not been repaired yet.'

a'. ....[A_____]TU/PO...............(TS).........

The "temporal proximity adverbs" in (46a) trigger a future prospective meaning when the verb carries one of markers of future temporal reference, namely –*AcAK*, -*Ar/Ir* or –*(I)yor* (cf. Chapter 4). The implication is that the change of state to be brought about, i.e. the repair of the TV set, is temporally close to the given TU/PO. However, the temporal distance from the given PO to the RB of the adverbial is only implicit. In other words, these adverbs are not only implicit about the RB, but also about the duration of the adverbial interval, which cannot be objectively measured.

(46) a. Televizyon **yakında/az sonra/hemen** onar-ıl-acak./onar-ıl-acak-tı.
TV soon/in a short while/immediately fix-PASS-FUT-3sg./fix-PASS-FUT-PRF
'The TV set is/was going to be repaired soon/in a short while/immediately.'

a'. ....TU/PO/[A_____](TS).........

As can be seen in (47a), *hâlâ* refers to an unspecified interval of time that coincides with TU/PO. The most important property of *hâlâ* is that a change of state that will be marked its RB remains unrealized at TU/PO, although the event itself implies that possibility of change. The interaction of *hâlâ* with stative, activity, semelfactive, achievement, and accomplishment STs in Turkish is illustrated in (48a-e) respectively (cf. Erguvanlı-Taylan (2001) for a discussion of *hâlâ*).

(47)   a. Televizyon **hâlâ** bozuk./çalış-ıyor.
        TV still out of order-3sg/work-IMPRF-3sg.
        'The TV set still out of order/working.'

        a.'...........[A/TS_____TU/PO____].........

(48)   a. Erinç **hâlâ** ekran-da./*uzun boylu. (stage-level/individual-level stative)
        Erinç still screen-LOC/*tall
        'Erinç is still on the screen./*tall.

        b. Erinç **hâlâ** *yüz-dü./yüz-me-di/yüz-üyor./yüz-ecek. (activity)
        Erinç still swim-PRF/swim-NEG-PRF/swim-IMPRF-3sg/swim-FUT-3sg
        'Erinç still *swam/has not swum/is swimming/will swim.'

        c. Erinç **hâlâ** *hapşır-dı./hapşır-ma-dı/hapşır-ıyor./hapşır-acak. (semelfactive)
        Erinç still sneeze-PRF/sneeze-NEG-PRF/sneeze-IMPRF-3sg/sneeze-FUT-3sg
        'Erinç still *sneezed/has not sneezed/is sneezing/will sneeze.'

        d. Erinç **hâlâ** ev-e *var-dı./var-ma-dı/*var-ıyor. (achievement)
        Erinç still home-DAT arrive-PRF/arrive-NEG-PRF/arrive-IMPRF-3sg
        '*Erinç still has arrived/is arriving at home.'

        e. Erinç **hâlâ** okul-a *yürü-dü/yürü-me-di/yürü-yor/yürü-yecek.(accomplishment)
        Erinç still school-DAT walk-PRF/walk-NEG-PRF/walk-IMPRF/walk-FUT-3sg
        'Erinç still walked/has not walked/is walking/will walk to school.'

The adverb is acceptable with the activity in (48b), as opposed to the momentary achievement in (48d), suggesting that durativity is essential. As a result, *hâlâ* triggers a multiple-event activity reading in the semelfactive in (48c) and focuses on the activity part of the accomplishment in (48e). The acceptability of *–(I)yor* rather than *–DI* with *hâlâ* further suggests the durative 'imperfective' nature of the adverb. Note also that *hâlâ* is acceptable with *–DI* in the negative, referring to an interval within which the expected change of state has not occurred.

Interestingly enough, *hâlâ* in (48a) is acceptable with stage-level predicates which do not preempt a possible change of state. However, *hâlâ* is ungrammatical with individual-level states, where a change of state is excluded because they are atemporal in a sense. This behavior suggests that, unlike *artık* which preempts any further change of

state, *hâlâ* requires the possibility of a change of state. In fact, *hâlâ* and *artık* are counterparts: While the "realized change of state" adverb *artık* excludes a change of state starting from the given PO or TU, the "unrealized change of state" adverb *hâlâ* denotes the possibility of a change of state, although there has not been a change of state until TU/PO. In sum, *hâlâ* denotes the lack of change in the actual progress/continuation of situations, provided that they inherently include the possibility of change.

6.4. Discussion

The foregoing time-relational analysis has revealed a number of interesting facts about Turkish T/A adverbials, which seem to be at least as relevant to boundedness as the other two parameters, namely viewpoint aspect and situation. This supports our argument that Turkish T/A adverbials constitute the third parameter in aspectual interpretation.

To ensure a proper interpretation of a sentence, Frame should be established by means of T/A adverbials. Frame, the lexical analogue of viewpoint aspect, arises through a total or partial overlap of A with TS. Based on the nature of T/A information they provide in sentences, two major classes of Turkish T/A adverbials have been distinguished: (i) Position and (ii) Quantity. Position adverbs basically serve to specify the location of TS with respect to TU but are ST-external, not triggering ST-shifts. Quantity adverbs provide aspectual specifications such as (i) the duration of a situation (single instance SQAs), (ii) the number or frequency of iterated instances of a situation (multiple instance SQAs), and (iii) the relative direction of a situation with respect to a change of state (VQAs), etc. Single instance SQAs are ST-internal interacting with the boundedness information provided by viewpoints and situation types and triggering ST

shifts (cf. Chapter 5). As for VQAs, they seem to be required to trigger perfect readings with morphological elements which otherwise do not express such extended interpretations.

As has been illustrated, adverbs express highly specific and complex information, often interacting closely with tense and/or viewpoint morphology, situation types, negative polarity and other adverbs in the same sentence. The constraints on the possible readings and the compatibility of particular adverbs with the above mentioned aspectual elements suggest that adverbs constitute a highly effective agent in the overall interpretation. This is a major support for adverbs as the third parameter in aspectual interpretation.

CHAPTER SEVEN

CONCLUSION

> *"The lowest form of thinking is the bare*
> *recognition of the object. The highest, the*
> *comprehensive intuition of the man who sees*
> *all things as part of a system."* Plato

7.0. Introduction

In this chapter, the findings of the foregoing analysis of the expression of aspect

in Turkish will be evaluated with special focus on the major empirical and theoretical

contributions of the study to the general field of aspect. The present study has basically

argued in favor of three independent parameters of aspect, namely viewpoint, situation

type and T/A adverbials. It has further been argued that the concept of *boundedness* is

the prototypical property of aspect and is linguistically realized by grammatical and/or

lexical means of expression corresponding to the three parameters of aspect which

compositionally determine aspectual interpretation at sentence level.

Empirically, the most significant contribution seems to be the time-relational

analysis and categorization proposed to account for Turkish T/A adverbials, which have

not been analyzed in such detail so far. In addition, a categorization of the Turkish

imperfective has been proposed, based on both time-relational and mereological

assumptions. Moreover, a unitary proposal in terms of change of state has been made to

account for the entire range of periphrastic forms in Turkish. Finally, the variety in the

expression of change of state, i.e. by means of periphrastic forms, derivational

morphemes, perfect of result and T/A adverbs, has been revealed, suggesting the

importance of the notion in aspectual categories.

Theoretically, the most significant contribution of the present dissertation seems

to have established a synthetic framework which brings together the common insights of Comrie (1976), Smith (1997), Klein (1992, 1995, 2000) and Krifka (1989). The discovery of analogies between set-theoretical relations and patterns of overlap among time intervals has led to the recognition of T/A adverbials as time intervals that establish time relations and a formalization of the overlap relations between adverbial intervals and TS in terms of the theoretical construct *Frame*. The elaboration of Smith's (1997) informal proposal about the feature [Bounded] has suggested a unitary model to account for the collaboration of independent parameters of aspect in the overall aspectual interpretation. Furthermore, the time-relational and mereological approaches to aspect have been tested against a wide range of Turkish data, leading to a number of theory-internal modifications in the time-relational approach such as the modified definition of the perfective in terms of a total overlap relation and the distinction between two reference intervals, namely the Topic Time in viewpoints and Point of Orientation in the perfect and prospective.

Generally speaking, the present study has employed the two major strengths of the time-relational approach in dealing with T/A adverbials and the imperfective in Turkish. The first is the use of universal interval properties and relations between time intervals such as TS, TU and TT in representing T/A distinctions, which has led to the construct Frame. The second is the incorporation of Smith's (1997) concept of visibility into the definition of viewpoint aspect through Topic Time (TT). As a special reference interval, TT overlaps with (a subpart of) a situation, makes it visible, and thus, is associated with the assertion. This property of TT has been illustrated to be instantiated in the total vs. partial overlap relation between TT and TS in perfective vs. imperfective viewpoints respectively.

On the other hand, Turkish data have revealed two major weaknesses of the time-relational approach. Firstly, aspectual notions such as habituality, iterativity and frequency were not handled at all in the unmodified time-relational approach. Secondly, the time-relational treatment of perfect and prospective as viewpoints failed to account for the data. Both weaknesses have been overcome in the present study by incorporating crucial insights from Smith (1997) and Krifka (1989). The notions habituality, iterativity and frequency have been shown to follow from quantificational reference to mereological structure and can now be handled easily as subcategories of the imperfective. As for the treatment of perfect and prospective, the concept of visibility associated with TT, i.e. the time of assertion, has allowed us to recognize the difference between TT and PO in these extended interpretations of the viewpoints, where a perfective or imperfective viewpoint has to be superimposed for assertion.

Finally, the mereological approach has led to a revelation of the paralellism in viewpoints between time-relational reference to internal temporal constituency and quantificational reference to mereological structure, thus giving rise to a novel understanding of time relations in terms of the mereological contrast between part and whole. Specifically, bounded perfective situations with total reference to internal temporal constituency contrast with unbounded imperfective situations with partial reference to internal temporal constituency.

The above mentioned findings seem to have the following implications: (i) boundedness seems to be the prototypical property of aspect as it is reflected in most grammatical and/or lexical means of expression of aspect, and (ii) boundedness seems to be reflected in the mereological contrast between part and whole and the visual/perceptual contrast between figure and ground, and therefore can be argued to be

a cognitive principle encompassing these contrasts as well as aspectual contrasts.

In short, the universal semantic category of aspect will be argued to be characterized by a cognitive principle called boundedness. In other words, aspect is argued to employ basic contrasts, i.e. part vs. whole and figure vs. ground, to express more subtle semantic distinctions, i.e. the relations of the human with events and objects in the surrounding space and time and how these relations are conceptualized and linguistically expressed. This should not be surprising, as language is not independent of human understanding of the world and linguistic categories are only expected to follow from cognition.

The chapter is organized as follows: The implications of the findings in (i-ii) above will be considered in § 7.1. and § 7.2. respectively. The theoretical implications of the findings for syntactic theory are discussed in § 7.3 and a number of topics for further research are mentioned in § 7.4.

7.1. Boundedness as the Prototypical Property of Aspect

The following arguments seem to support the view that boundedness is the prototypical property of aspect: (i) aspect itself has a prototypical organization (cf. Dahl (1985)), and (ii) boundedness is reflected in most grammatical and/or lexical means of expression of aspect.

The first argument in favor of boundedness as the prototypical property of aspect is based on Dahl's (1985) view of aspect as a prototypical category. Prototypical concepts are understood through the description of the best exemplar of a category, and are characterized by a cluster of properties. Dahl (1985:15, 32 et passim) notes that aspect is essentially an imprecise category[1] and, in order to deal with impreciseness, proposes a prototypical approach to aspectual categories. Indeed, Smith (1997) defines

STs as idealized, prototypical images of situations categorized on the basis of three T/A features. Similarly, prototypical viewpoints represent underdetermined categories, with marked values that account for cross-linguistic variation. Prototypes reduce impreciseness by allowing category membership to be assigned on the basis of characteristic properties. In other words, prototypes allow us to overlook individual differences and immediately recognize objects and events as a member of an idealized/canonical category.

There is a second advantage in recognizing aspect as a prototypical category, namely the pragmatic value assigned to marked choices. Aspectual choice is determined by the speaker not the situation, as discussed extensively by Smith (1983, 1986, 1997). In (2), adapted from Smith (1997:7, ex. (10) reproduced here as (1)), the speaker observes a situation in his/her subjective way.

(1)   The relation between situations, speakers, and meanings
       Actual situation   Meanings
              \   \
               \   Linguistic forms
                \   /
                      Speaker

(2)   Speaker
            /   \
       (Actual) situation   Speaker's subjective view of (actual) situation
            \   /
       Idealized mental representation of STs and viewpoints based on boundedness
         /   \
       Unmarked forms   Marked forms
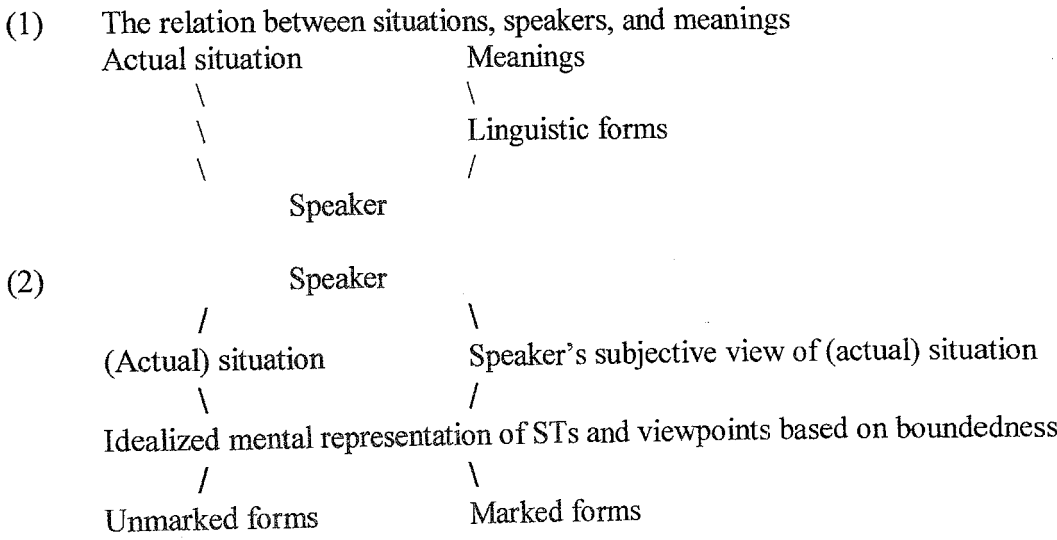
It can be argued that the speaker makes reference to idealized mental representation of situation types and viewpoints which get coded onto conventionalized forms in order to convey his/her own view of the situation in a maximally informative and unambiguous communication. Therefore, aspectual expression is not a matter of

default association of conventionalized forms with a situation but a matter of subjective choice. The speaker may choose to present a situation in an unmarked way by using the linguistic forms associated with an idealized situation type and prototypical viewpoint.[2] The speaker may also choose to present a situation in a marked way by using the linguistic forms not associated with the prototypical categories.[3]

ASPECT AS A LINGUISTIC INSTANTIATION OF BOUNDEDNESS					
GRAMMATICAL EXPRESSION		(COVERT) LEXICAL EXPRESSION		(OVERT) LEXICAL EXPRESSION	
+/- IMPLICIT BOUNDS		+/- INTRINSIC BOUNDS		+ INDEPENDENT B.	
VIEWPOINTS		+ CHANGE OF STATE		ST-EXTERNAL	
Perfective (+implicit b., total overlap, quantized)	Imperfective (-implicit b., partial ovl., cumulative)	[-durative] achievement	[+durative] accomplish.	-ITERATIVE Position Adverbials	+ ITERATIVE Multiple instance SQAs
PERFECT CONSTR.		- CHANGE OF STATE		ST-INTERNAL	
EP (perfective)	UP (imperfective)	[-durative] semelfactive	[+durative] activity	(-iter) Single Instance SQAs	
				-BOUNDED for an hour	+BOUNDED in an hour
PERIPHRASTIC FORMS		- CHANGE OF STATE		ST-INTERNAL	
		[non-dynamic]		(-iterative) VQAs	
+ change of state (+/- realized)	- change of state	state		[-Realized change of state]	[+ Realized change of state]

Table 7.1: The expression of boundedness in aspect in terms of grammatical and/or lexical means

The second argument in favor of boundedness as the prototypical property of aspect is suggested by the Turkish data: the contrast between (i) events and states, (ii) totally affected objects and partially affected ones and (iii) completed situations and ongoing ones seem to reflect a binary distinction between the bounded and the unbounded.

In fact, aspect seems to be the linguistic instantiation of boundedness expressed in terms of lexical and grammatical means (cf. **Table 7.1.**). Lexical means may be covert, i.e. situation types, or overt, i.e. T/A adverbials (cf. Smith (1997)). Grammatical means include viewpoints, perfect constructions and periphrastic forms.

Boundedness expressed covertly involves the intrinsic bound/the natural endpoint/set terminal point in telic events. The notion of change of state is covertly expressed through the interaction of the intrinsic bound with duration (cf. Smith (1997)). Change of state may be gradual as in accomplishments, or instantaneous as in achievements. Activities and semelfactives do not involve a change of state but are dynamic like the telic STs. States, on the other hand, are non-dynamic and do not involve a change of state.

Boundedness expressed overtly involves the independent bounds inherent in T/A adverbials. All T/A adverbials impose independent temporal bounds, though not all of these bounds are linguistically explicit. T/A adverbials also differ in terms of (i) whether they operate ST-internally or externally, and (ii) whether they specify a single instance or multiple instances of situations. ST-external adverbials do not cause ST shifts, while ST-internal adverbials do cause such shifts. Interestingly, the notion of change of state is lexicalized in VQAs, which differ as to whether or not the change of state is realized. Note that this is an epistemic modal notion, i.e. factuality.

Boundedness expressed grammatically involves implicit bounds imposed by the perfective viewpoint, characterized by total reference to internal temporal constituency and quantization. The imperfective is characterized by the lack of implicit bounds, partial reference to internal temporal constituency and cumulativity.[4] Perfect constructions also reflect a contrast between the bounded, perfective Existential Perfect

(EP), and the unbounded, imperfective Universal Perfect (UP). The term "construction" is due to the fact that EP and UP arise from the obligatory co-occurrence of VQAs with perfective vs. imperfective T/A morphology. Finally, all periphrastic forms in Turkish seem to be characterized by change of state. Periphrastic forms do not compensate for the T/A distinctions that remain ungrammaticalized, but for the notions like ingressive, egressive, etc. which are not expressed among the prototypical STs. Semantically, the most complex expression of change of state is the perfect of result, a variety of Existential Perfect, which links a process, a change of state and its result.

In sum, boundedness seems to be reflected in viewpoints (implicit bounds), situation types (intrinsic bounds) and adverbials (independent bounds). In that respect, boundedness seems to be linguistically realized by grammatical and/or lexical means of expression corresponding to the three parameters of aspect which compositionally determine aspectual interpretation at sentence level.

This view indirectly provides further evidence for the major argument of the present dissertation that T/A adverbials constitute the third parameter in aspectual interpretation. If T/A adverbials converge with the two parameters, namely viewpoint and situation type, in expressing boundedness, they should have equal status with these two parameters. There are a number of other arguments in favor of T/A adverbials as the third parameter. Firstly, T/A adverbials are essential in compensating for the lack of T/A morphology in a language (cf. Demirdache & Uribe-Etxebarria (2001)).[5] Secondly, T/A adverbials are essential for a proper temporal/aspectual interpretation in a sentence (cf. Smith (1981)). Thirdly, T/A adverbials are essential in triggering perfect meaning. In fact, Iatridou et al. (2000) posit covert adverbs when there is perfect morphology and meaning but no overt adverbs. Fourthly, T/A adverbials are essential in specifying

Turkish T/A markers which are underspecified and multi-functional (cf. Yavaş (1980), Sezer (2001), Erguvanlı-Taylan (2001)). Finally, adverbs express highly specific and complex information, often interacting closely with T/A morphology, situation types, negative polarity and other adverbs in the same sentence, and triggering ST shifts. This suggests that Turkish T/A adverbs constitute a highly effective agent in the sentence, i.e. the third parameter in aspectual interpretation.

It might be argued that the ST shifts caused by *in an hour* vs. *for an hour* adverbs are universal, i.e. not restricted to Turkish and easily accounted for the Principle of External Override of Smith (1997). However, this amounts to ignoring the various other classes of T/A adverbials (cf. Chapter 6). Moreover, the Principle of External Override actually grants an omnipotent status to T/A adverbials in a sentence. Recall that aspectual meaning was first thought to be only in the verbal semantics. Later, Smith (1997) proved that not only the verb but also its arguments, i.e. the verb constellation, were relevant in aspectual interpretation. In this study, it has been argued that aspectual interpretation occurs at sentence level, where the verb, its arguments and T/A adverbials constitute three independent parameters, which interact with each other, thus resulting in a truly compositional interpretation.

Granting equal status to T/A adverbials along with the two parameters, i.e. viewpoint and situation type, is not to say that all three parameters are equally effective in aspectual interpretation. In Chapter 4, it was observed that, cross-linguistically, what varies is (i) the relative weight of the three parameters in the overall aspectual interpretation, (ii) the marked and unmarked means of expression, and pragmatic meanings associated with particular expressions (cf. above). If a certain parameter is relatively stronger than the other two parameters in a particular language, the expression

of the remaining parameters may be less explicit. This is the case in SGaelic where "strong" viewpoint morphology works at the expense of ST and adverbs. Accordingly, the relative significance of Case and adverbs in Turkish may be due to the underspecified and multifunctional T/A morphology.

Overlap relations between intervals: Viewpoint (TS & TT); Frame (TS & A)		
Set-theoretical definition	**Linguistic instantiation**	**Schemata**
Total overlap (equality: X=Y) ....X/Y........... 'X totally overlaps with Y'	VPT: Perfective (TS/TT)	.......TS/TT.........
	Frame: Pattern I (TS/A) (also **Universal perfect**)	.......TS/A.........
Partial overlap (1) (proper inclusion: Y ⊂ X) .....[x....Y.....]....... 'Y in X'	VPT: Russian perfective (TS in TT)	.....[TT.....TS.....]....
	Frame: Pattern III (TS in A) (also **Experiential perfect; Perfect of recent past and Present prospective with [–dur] STs**)	......[A.....TS.....].....
Partial overlap (2) (proper inclusion: X ⊂ Y) ......[Y....X.....]....... 'X in Y'	VPT: Imperfective (TT in TS)	.....[TS....TT.....]....
	Frame: Pattern II (A in TS)	....[TS....A.....]......
Partial overlap (inclusion: Y ∩ X or X ∩ Y) ...[X...{Y___]....}.... 'X intersects with Y'	VPT: ---	---
	Frame: Pattern IV (A intersects with TS) (also **Perfect of recent past, Present prospective** with [+dur] STs)	..[TS...{A___]...}.. ..[A...{TS___]...}..

Table 7.2: Linguistic instantiations of set-theoretically possible overlap relations between two intervals

- The ultimate evidence in favor of T/A adverbials as the third parameter is the fact that T/A adverbials, being temporal intervals themselves, may be represented by the same temporal schema along with viewpoints and situation types (cf. ex. (16) in Chapter

2, ex. (1) in Chapter 6). By virtue of being time intervals, T/A adverbials establish overlap relations with TS, i.e. **Frame**, the lexical analogue of viewpoint aspect. As such, both viewpoints (grammatical) and Frame (lexical) appear as the linguistic instantiations of the set-theoretically possible overlap relations between two intervals (cf. **Table 7.2**).

In sum, the two major arguments in favor of boundedness as the prototypical property of aspect mentioned above seem to highlight a number of points concerning the nature of aspectual categories: (i) aspectual categories make a binary distinction between the bounded and the unbounded, (ii) aspectual categories are imprecise categories, characterized by prototypical organization, (iii) languages differ in terms of the relative weight of the three parameters and the grammatical and/or lexical means made available for the expression of each parameter, and (iv) pragmatically, the speaker makes a subjective choice among marked and unmarked values of aspectual categories. In short, aspect seems to be a prototypical category characterized by the property of boundedness, which is linguistically realized by the three parameters of aspect.

7.2. Boundedness as a Cognitive Principle

There are two major arguments to support the view that boundedness is a cognitive principle not only behind aspectual contrasts but also behind the contrast between part and whole in mereological structure and that between figure and ground in visual perception: (i) aspectual categories are based on human cognition and (ii) the paralellism between linguistic categories and the visual contrast between figure and ground has already been observed (cf. Wallace (1982)).

Firstly, aspectual categories have been argued to be based on human cognitive abilities and concepts not necessarily dependent on language such as space, time,

causality and an affected object (cf. Dahl (1985), Smith (1997:xv), Talmy (2000a, b)). The importance of cognition in language has already been noted (cf. Langacker (1991), Lee (2001), Taylor (2002)). Aspectually speaking, the difference between states and events is cognitively real and acquired early in life (cf. Aksu-Koç (1988), also Shirai & Andersen (1995), Salaberry (2000), Aguirre (2002)[6] for similar acquisitional facts).

Secondly, the innate, universal distinction between figure and ground in visual perception has been noted to apply to some (non-visual) linguistic phenomena (cf. Wallace (1982:201)).[7] The present study has only focused on the contrast between events vs. states, count vs. mass, and perfective vs. imperfective among other contrasts mentioned by Wallace (1982). Wallace (1982) notes that in all these cases, the former is more salient, i.e. figure-like, such that there is a sharper contrast with what remains in the ground.

Our data have indicated means in Turkish to make aspectual categories more ground-like or more figure-like by resorting to marked choices. For example, to make a telic, i.e. bounded, situation more ground-like, we can use (i) the stativizing suffix –mIş, as in (3a), (ii) cumulative reference through –Ar/Ir, as in (3b), and (iii) linguistic conventions associated with states, e.g. the –mAk-tA form, as in (3c). These amount to presenting an event statively, i.e. more ground-like.

(3)   a. İmge [beş kilometre] koş-muş, kan ter içinde.(perfect of result; accompl.)
İmge five kilometer run-PERF-3sg, blood sweat inside
'İmge has run five kilometers and is exhausted.'

      b. İmge her gün sahil-de [beş kilometre] koş-ar. (imperfective; activity)
İmge everyday shore-LOC five kilometer run-AOR-3sg
'İmge runs five kilometers along the shore everyday.'

      c. İmge şu anda günlük beş kilometre-si-ni koş-mak-ta. (imperfective, activity)
İmge at the moment daily five kilometer-3sg-ACC run-INF-LOC-3sg
'At the moment, İmge is in the middle of her daily five-kilometer run.'

In contrast, if the situation is atelic, i.e. unbounded, it can be made more figure-like, as in (4). To make an atelic situation a "figure" we can provide an eventive presentation with (i) implicit bounds, as in (4a), (ii) quantized reference, as in (4b), and (iii) linguistic conventions associated with events, as in (4c). Note that the celerative verbal compound marker –(I)ver- implies dynamism in the stative verb beğen- 'like' and this is presenting a state eventively. In short, these means to make aspectual categories more figure-like seem to follow from the tendency to present events as bounded entities with contours, i.e. boundaries, so that they can be in perfect contrast with the background.

(4)   a. **Dün** sahil-de koş-tu-m. (perfective; activity)
        yesterday shore-LOC run-PRF-1sg
        'I ran along the shore yesterday.'

        b. **Dün** [beş kilometre] koş-tu-m. (perfective; accomplishment)
        yesterday five kilometer run-PRF-2sg
        'I ran five kilometers yesterday.'

        c. Zaman-ım yok-tu, çocuk-lar-a **on dakika-da** [üç] elbise beğen-iver-di-m.
        time-1sg none-PRF, child-PL-DAT ten minute-LOC three dress like-Iver-PRF-1sg
        'I had little time, I (quickly) chose three dresses in ten minutes for the children.'

As Smith (1997:xv) notes, human beings perceive and interpret the world, relying on basic cognitive concepts such as time, space, causality and affected object. However, everybody has a subjective view of the world based on prior experience and learning. Consequently, it can be argued that in our description of the world and events, we make reference to whatever is common to all, e.g. prototypical ST categories, i.e. states vs. non-states, mereological structure, i.e. part vs. whole, mass vs. count, and the contrast between the bounded and the unbounded, for a better communication where there is unambiguous "recognition of the object." The perception of events and objects as prototypical entities mentioned in § 7.1. above also allows for a sharper contrast

between total vs. partial overlap, an event vs. a state, or a count vs. mass object in analogy to the contrast between figure and ground in the world of visual perception (cf. Wallace (1982), Demirdache & Uribe-Etxebarria (2000, 2001), Talmy (2000a, b)).

If we are right, then boundedness may indeed be a cognitive principle behind the visual (figure vs. ground) and mereological (part vs. whole) contrasts as well. Gestalt[8] theorist Koffka's famous question was "Why do things look as they do?" (cf. Gordon (1989:51)). In terms of aspect, the question would be "Why are situations presented as they are?" It can be argued that the answer to both questions seem to share the same cognitive basis, boundedness, or a tendency to look for a perfect configuration in the world. This is only expected, as human cognition is behind both visual perception and the expression of aspect in the realm of linguistics (cf. Talmy (2000a, b)).

7.3. Implications of the Findings for Syntactic Theory

Two interrelated questions arise with respect to the structural representation of aspect and adverbs: (i) Is there an independent functional projection for aspect in Turkish? and (ii) What is the base-generated position of T/A adverbs?

Aygen-Tosun (1998) has argued that there is no independent functional projection (FP) for aspect in Turkish, but a hybrid T/A projection, following Giorgi & Pianesi (1997). Our data support this argument in two related respects: (i) Turkish T/A morphology is not "aspectually specific" in contrast to SGaelic (cf. Ramchand (1997)) and (ii) Turkish T/A morphology is underspecified and multi-functional such that the same marker may have distinct temporal, aspectual and modal functions depending on the immediate context and/or the other T/A elements in the sentence. As a consequence, T/A adverbials and STs carry great weight in compositionally determining the aspectual value of a sentence. In brief, a hybrid T/A projection in the sense of Aygen-Tosun

(1998) seems sufficient and required to account for the underspecificity and multifunctionality.

"Aspectual specificity" is the major motivation for an independent FP for aspect in SGaelic. As illustrated by the data in (5-8) from Ramchand (1997:69-72, exx. 90-92, 97 respectively), aspectual specificity in SGaelic is reflected in viewpoint morphology on the predicates and the total/partial affectedness of NPs, resulting in a binary distinction between telic/bounded and atelic/unbounded events (ibid:53).[9] The "bounded" perfective in SGaelic is expressed in main verbs, as in (6), while the "unbounded" imperfective in (5) involves periphrasis. While both the covert perfective marker in (6) and the perfect marker 'air' in (7) signify that the object is totally affected (also cf. ibid:48-49, exx. 48 and 49 respectively), the NP object in (5) is not totally affected with the imperfective 'ag' (also cf. ibid:48, ex. 47). In short, (5) is atelic, while (6), (7) and (8) are telic because telicity/boundedness in SGaelic is triggered by viewpoint morphology rather than situation type or adverbs.

(5)   Bha Calum a'gearradh craobh.   (imperfective, -bounded)
        Be-PAST Calum 'ag' cut-VN tree-GEN
        'Calum was cutting a tree.'

(6)   Gheàrr Calum craobh.   (perfective, +bounded)
        cut-PAST Calum tree-DIR
        'Calum cut a tree.'

(7)   Bha Calum air a'chraobh a ghearradh   (perfect, +bounded)
        Be-PAST Calum air the tree-DIR 3sg cut-VN
        'Calum had cut the tree.'

(8)   Tha Calum gus a'chraobh a ghearradh   (prospective, +bounded)
        Be-PRES Calum gus the tree-DIR 3sg cut-VNOUN
        'Calum is about to cut the tree.'

As reflected in the phrase structure representation in (9) adapted from Ramchand (1997, exx. 50, 53, 54), SGaelic viewpoint morphemes that occupy the head position of

AspP are the morphological spell-out of the boundedness feature and the morphemes in (6), (7), and (8) have a positive value for the feature.

(9)
```
                          IP
                        /    \
                   I'         SPEC
                 /    \
              I         AspP
           [+Past]     /     \
                    SPEC       Asp'
                    Subject   /    \
                           Asp       VP
                    +/-bounded      /    \
                    (air vs. ag)  SPEC      V'
                              derived object  /    \
                                           V      XP
```

(10)
```
            AGRP
           /    \
      SPEC        AGR'
      SBj NPi    /     \
             T/AP        AGR
            /    \
        SPEC       T/A'
        ADV_FRQ   /    \
               NEGP      T/A
              /    \
          SPEC       NEG'
          NPI       /    \
                 MODP      NEG
                /    \
            SPEC       MOD'
            ADV_E     /    \
                   VP        MOD
                  /    \
              SPEC       V'
              i           \
                          V
```
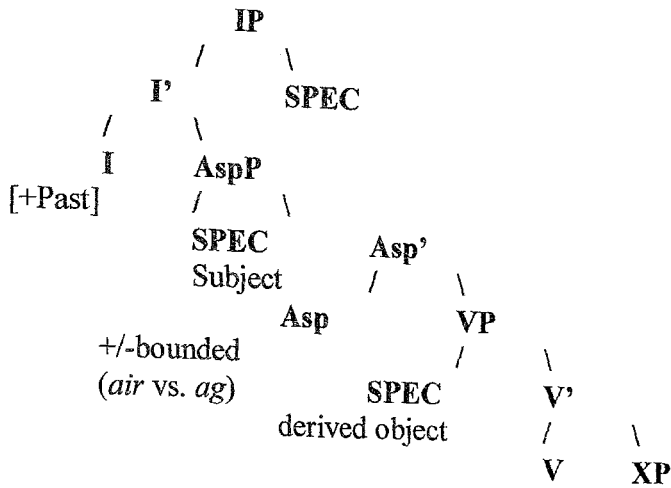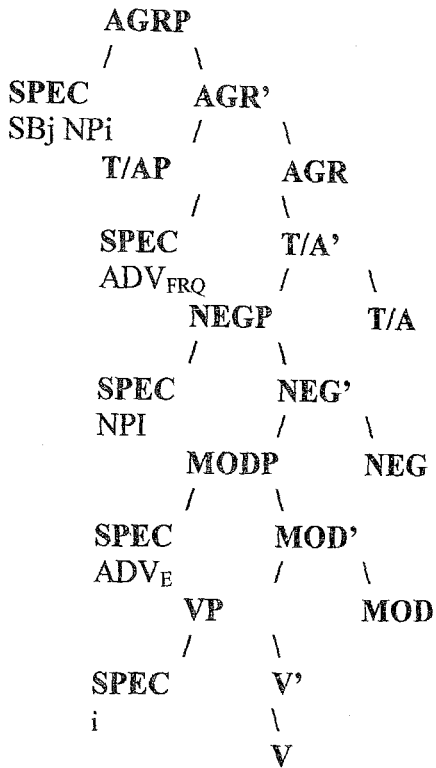
If indeed aspectual specificity expressed by means of viewpoint morphology is a necessary condition for an independent AspP, as suggested by the analysis of Ramchand (1997) above, then in Turkish such an independent AspP does not seem to be required in the way it is required in SGaelic. This is because Turkish perfective morphology is not

specifically bounded, leaving NP objects or adverbs to specify the value of the feature. As for Case, the choice of viewpoint morphology was observed in Chapter 4 to be independent of case marking. Therefore, a hybrid T/A functional projection in the sense of Aygen-Tosun (1998:48, ex. 3) as in (10) above seems sufficient to account for (i) the aspectual "neutrality" of Turkish verbal morphology and (ii) the underspecification and/or multi-functionality of T/A morphemes (cf. Chapter 3) (cf. Aygen-Tosun (1998) for her original arguments).

As for the base-generated position of Turkish T/A adverbs, Aygen-Tosun (1998) argues that adverbs of frequency are base-generated in the specifier position of the hybrid T/A projection. This is against the view of Cinque (1999)[10] who posits a number of independent FPs whose specifier positions host semantically related adverbs (also cf. Cinque (2001), Alexiadou (1997)[11] and Ernst (2002)[12]). In a similar vein, Iatridou et al. (2000) argue that there are at least two levels of adverbials whose structural ordering correlates with semantic scope (also cf. Demirdache & Uribe-Etxebarria (2000, 2001)).[13] These are Perfect-level and Eventuality-level adverbs which attach to PerfP and AspP respectively, as in (11) (cf. ibid:49).[14]

(11) TP   Tense-level adverbials[15]
      |
      PerfP   Perfect-level adverbials
      |
      AspP/VP   Eventuality-level adverbials

A natural question is whether there are indeed three (or more) "levels" of Turkish T/A adverbials, whose surface position is a consequence of the hierarchical position of their respective FPs. Another question is how to determine which adverbials belong to which level.[16] The syntactic implications of these questions require further research beyond the scope of the present study, however, let us provide some preliminary data to

underline some points of interest.

T/A adverbs are noted to be relatively free in the sentence and subject to the general pragmatic tendencies in the language (cf. Erguvanlı (1984), Kornfilt (1997)). Cinque (1999) also mentions that adverbs of temporal location freely occur within the sentence. In (12a-d), with neutral sentential stress on the constituent immediately preceding the verb, the adverb is part of focus as in (12a-b) when it is VP-adjoined, while the IP-adjoined adverb in (12c-d) sets the scene/background for the TS under focus (cf. de Swart (1999)).[17] However, in (12), the perfective TS is totally contained within the adverbial interval specified by the Position adverbial *dün akşam* 'yesterday evening' (Pattern III), suggesting that the syntactic position of the adverb is hardly relevant for aspectual interpretation.

(12) a. Ahmet eşya-lar-ı-nı **dün akşam** topla-dı.
      Ahmet belonging-PL-3sg-ACC yesterday evening pack-PAST-3sg
      'Ahmet packed his belongings yesterday evening.'

      b. Ahmet **dün akşam** eşya-lar-ı-nı topla-dı.
      'Ahmet packed his belongings yesterday evening.'

      c. **Dün akşam** Ahmet eşya-lar-ı-nı topla-dı.
      'Yesterday evening Ahmet packed his belongings.'

      d. Ahmet eşya-lar-ı-nı topla-dı **dün akşam.**
      'Yesterday evening Ahmet packed his belongings.'

As for the VQA *dünden beri* 'since yesterday' in (13a-c), which triggers Experiential Perfect and Universal Perfect readings, there is no meaning change arising from its position, regardless of whether it is VP-adjoined as in (13a) or IP-adjoined as in (13b-c).

(13) a. Ahmet **dün-den beri** hasta./çalış-ıyor./sekiz kişi-yle konuş-tu.
      A. yesterday-ABL since sick/work-PROG/8 people-COM speak-PAST
      'A. has been sick/has been working/has spoken to 8 people since yesterday.'

b. **Dün-den beri** Ahmet hasta./çalış-ıyor./sekiz kişi-yle konuş-tu.
'Since yesterday A. has been sick/has been working/has spoken to 8 people.'

c. Ahmet hasta./çalış-ıyor./sekiz kişi-yle konuş-tu **dün-den beri**.
'Since yesterday A. has been sick/has been working/has spoken to 8 people.'

Apparently, the position of the adverb triggers a change in aspectual interpretation only with the form $-mI\varsigma\text{-}DI^{18}$ co-occurring with telic STs, i.e. achievements and accomplishments. Under neutral stress, the IP-adjoined Position adverb *dün akşam* 'yesterday evening' triggers a pluperfect reading in (14a), whereas it yields a past perfective reading in (14b-c) when it is VP-adjoined.

(14)   a. **Dün akşam** Ahmet eşya-lar-ı-nı **(çoktan)** topla-mış-tı. (pluperfect)
yesterday evening Ahmet belonging-PL-3sg-ACC already pack-PERF-PAST-3sg
'Ahmet had (already) packed his belongings by/before yesterday evening.'

a'. Ahmet eşya-lar-ı-nı ??**dün akşam çoktan** topla-mış-tı. (??pluperfect)

a''. **Dün akşam** *çoktan Ahmet eşya-lar-ı-nı topla-mış-tı. (*pluperfect)

b. Ahmet eşya-lar-ı-nı **dün akşam** topla-mış-tı. (past perfective)
'Ahmet packed his belongings yesterday evening.'

b'. Ahmet eşya-lar-ı-nı *çoktan dün akşam topla-mış-tı.

b''. *Çoktan Ahmet eşya-lar-ı-nı **dün akşam** topla-mış-tı.

c. Ahmet **dün akşam** eşya-lar-ı-nı topla-mış-tı. (past perfective)
'Ahmet packed his belongings yesterday evening.'

Note that in the pluperfect the adverb is associated with the PO, as schematized in (15a), while in the past perfective it is associated with TS/TT as in (15b). In addition, without the lexical marker of anteriority and completion *çoktan* 'already' there is no pluperfect reading. It should also be mentioned that the VQA *çoktan* seems to be closer to the predicate at all times than the Position adverb *dün akşam*. In other words, in terms of word order, ST-external Position adverbs which specify the temporal location of TS seem to be "outer" than adverbs that operate ST-internally such as *çoktan*. The infelicity

of (14a'-a'') and (14b'-b'') may be an effect of the scope-related restrictions due to the co-occurrence of two T/A adverbials.

(15)   a. ....(TS/TT).........PO/A............TU.............   (pluperfect)

       b. ....(TS/TT)/A.........................TU.............   (past perfective)

As for atelic STs co-occurring with *–mI ş-DI*, the only possible reading is the past perfective, regardless of whether the VQA *düne kadar* 'until yesterday' is VP-adjoined as in (16a) or IP-adjoined as in (16c-d). Similarly, the atelic stative in (17) has a past perfective reading. In fact, in (16-17) *–mI ş-DI*, *–DI* and *–DI-yDI*, which are modally distinguished, all have the past perfective reading.

(16)   a. Ahmet **dün-e kadar** herkes-le konuş-muş-tu./konuş-tu./konuş-tu-ydu.
       A. yesterday-ABL until everyone-COM speak-PERF-PRF/-DI/-DI-yDI
       'Ahmet spoke to everyone until yesterday.'

       b. Ahmet herkes-le ***dün-e kadar** konuş-muş-tu./konuş-tu./konuş-tu-ydu.
       'Ahmet *until yesterday spoke to everyone.'

       b'. Ahmet herkes-le ?**dün-e kadar dikkatle**[19] konuş-muş-tu./~-tu./~-tu-ydu.
       A. everyone-COM yesterday-ABL until carefully speak-PERF-PRF/-DI/-DI-yDI
       'Ahmet ?until yesterday carefully spoke to everyone.'

       c. **Dün-e kadar** Ahmet herkes-le konuş-muş-tu./konuş-tu./konuş-tu-ydu.
       'Until yesterday Ahmet spoke to everyone.'

       d. Ahmet herkes-le konuş-muş-tu./konuş-tu./konuş-tu-ydu **dün-e kadar**.
       'Until yesterday Ahmet spoke to everyone.'

(17)   (**Geçen Cuma**) bu elbise-yi (**geçen Cuma**) giy-miş-ti./giy-di-ydi./giy-di.
       (last Friday) this dress-ACC (last Friday) put on-PERF-PRF/-DIyDI/-DI
       '(Last Friday) she wore this dress (last Friday).'

Interestingly, the ambiguity of *–mI ş-DI* in telic STs is also observed in English telic STs co-occurring with (had + past participle) morphology, which is noted to be ambiguous between "past-in-the-past" and pluperfect readings. In fact, all the examples given in all the sources mentioning the ambiguity (cf. Hornstein (1977), Salkie (1989),

Binnick (1991), Klein (1992), Michaelis (1994), and Hitzeman (1997) among others) are achievements co-occurring with "point" adverbials such as *at 6*, as in (18) below. Like Turkish, the pluperfect reading arises when the adverb is in IP-adjoined (sentence-initial) position, as in (18a). However, unlike Turkish, the sentence-final position, i.e. the VP-adjoined position, allows both pluperfect (18b) and past perfective readings (18b').

(18) a. At 6, the man had (*exactly/already) arrived.   (pluperfect)

      b. The man had (*exactly/already) arrived at 6.   (pluperfect)
      b'. The man had arrived (exactly/*already) at 6.   (past-in-the-past)

The following tentative explanation is proposed to account for this curious behavior. The difference between pluperfect with telic STs and the rest of the viewpoints with all STs is based on the association of the T/A adverbs with TS/TT or PO. In the perfective and imperfective, T/A adverbs are unambiguously associated with TS, which totally or partially overlaps with TT. As TT is the time of assertion, the adverbs are naturally associated with the semantic assertion, which, in turn, is associated with the VP. Therefore, there is no potential risk of ambiguity: the adverbs are always semantically and time-relationally associated with TS/TT, whether they are structurally VP- or IP-adjoined. In short, adverbs in perfective and imperfective sentences seem to be structurally free because they are unambiguously associated both with TS and TT.

In the perfect and prospective, which arise from an order relation between TS and PO, there are two reference intervals. One that establishes an order relation with TS, i.e. PO, and one that conveys the assertion by overlapping with the TS, i.e. TT. Consequently, A may potentially be associated with PO or TS. If A overlaps with TS, it will be associated with TT and assertion. If A overlaps with PO, it will be external to

TS and the assertion. This potential ambiguity causes the syntactic position of the adverbs to be pragmatically relevant, depending on whether A is a part of assertion (as a result of overlapping with TS and TT) or merely provides the temporal setting (as a result of being associated with PO, which necessarily is disjoint from TS).[20]

Although further research is required to test the behavior of all varieties of Quantity adverbs and the consequences of multiple T/A adverbs in the same sentence, the limited set of data involving Position and Vector Quantity adverbs in (12-14, 16-17) suggests that the structural position of adverbs is pragmatically relevant when there is potential ambiguity in time-relations.

7.4. Topics for Further Research

There are a number of topics left for further research as they did not fall within the limited scope of the present study. First of all, as the time-relational approach is not intended to account for the expression of modality in terms of T/A morphology, further research is required on the expression of modality in Turkish and its interaction with tense and aspect. There are a number of pioneering studies on Turkish modality, e.g. Sansa-Tura (1986), Ozil (1994), Kerslake (1996), Ruhi et al. (1997), Erguvanlı-Taylan (2000); on the relation of modality with temporality, e.g. Enç (1997); and on the relation of modality with aspect, e.g. Slobin & Aksu (1982), Savaşır (1986), and Aksu-Koç (1988).

Any research on Turkish (epistemic) modality must account for three basic facts, further corroborated by the findings of the present study: (i) all Turkish sentences express some modal distinction, e.g. like Tuyuca (cf. Palmer (1986:27)), (ii) T/A markers, in addition to their temporal/aspectual functions, generally express epistemic modal distinctions, e.g. factuality, certainty and evidentiality, rather than deontic modal

meanings, e.g. necessity/obligation and permission/ability, which get expressed by specialized verbal morphology, namely *–mAlI* and *–AbIL* respectively, and (iii) there is an intricate relation among tense, aspect and modality.

In fact, any study on the Turkish TAM system must account for the intricate relations among (i) the multiple functions of a single morpheme and (ii) multiple morphemes that converge in the expression of a single function. The first case is exemplified by the general imperfective marker *–DI* which basically expresses past tense, i.e. anteriority (temporal distance) (cf. Yavaş (1980)), but as the outer marker in complex forms, it expresses modal distance. This suggests that a single marker may have a core meaning, but there may be a number of extended meanings related to the core meaning in some way. In this respect, Lee's (2001) arguments for a prototypical approach to such multiple functions within the framework of cognitive linguistics seem promising. As for the second case, *-(y)AcAK, -(I)yor and –Ar/Ir* have all been noted to express futurity, but they are modally distinguished on the basis of certainty and evidentiality (cf. Yavaş (1980)). In short, a systematic categorization of the complete range of Turkish TAM morphology, which fully incorporates mood and modality into the analysis and/or categorization, is yet to be proposed (cf. Johanson (1994) and Sezer (2001) for preliminary attempts with a focus on T/A functions rather than modality).

As far as language acquisition is concerned, Dunlea (1989) notes that when visual information is absent, the development of realistic conception of the world is inhibited, resulting in deficient development of language. In this study, it has been argued that the prototypical property of aspect is boundedness, a cognitive principle underlying not only the contrast between figure and ground but also that between part and whole. It has also been argued that the contrast between the perfective and

imperfective is based on a total vs. partial overlap relation. Two related questions might be raised with respect to the acquisition of viewpoints by blind children: (i) Can the aspectual distinctions that depend upon the figure-ground contrast or the overlap relation be acquired at all? or (ii) Are such aspectual distinctions acquired in some other way involving other senses, e.g. can the contrast between part and whole acquired through tactile experience with objects be generalized to such aspectual distinctions? If the answer to the final question were in the positive, then this would provide support for the argument that boundedness underlies not only visual perception but also mereological structure.

Another line of research to follow would be to investigate the interaction among affected objects, transitivity and causation. The data in Chapter 5 have suggested that the participant property is related to argument structure and thematic roles. Tenny (1994, 2000) and Krifka (1989) have already incorporated thematic roles into their frameworks. The classical study on transitivity by Hopper & Thompson (1980) is also suggestive of the relation of a number of grammatical categories including aspect with foregrounding vs. backgrounding, i.e. discourse. In the present study, as the data were presented totally out of context, the implications of Smith's (1997) representation of aspect within the Discourse Representation Theory have not been considered at all. However, in discourse, more salient/figure-like aspectual categories have been noted to become part of foregrounded portions of utterances (cf. Wallace (1982: 212)). For example, the imperfective often forms the background for the sequences of perfective events that allow for temporal advancement (cf. Hopper (1979, 1982) and Kiefer (1995)). The semantic and pragmatic implications of the interplay of viewpoints, situation types and adverbs within context remain to be investigated with respect to

Turkish.[21]

Last of all, there are four possible topics concerning adverbials. Firstly, the relative order of T/A adverbs within the sentence and their structural representation should be considered, with special focus on the implications of the work by Cinque (1999). Secondly, the relation of adverbs, events and quantification in Turkish has not yet been considered (cf. Bonomi (1997), Cohen (1999), Lenci & Bertinetto (2000), Lewis (2002) on adverbs of quantification in English and Italian). Thirdly, the function of markers such as *–mA*, *-IncA*, *-Ip*, etc. in temporal/aspectual adverbial clauses have not been dealt with in sufficient detail (cf. Erguvanlı-Taylan (1993) for the function of *–DIK* in subordinate clauses in Turkish and Aksu-Koç & von Stutterheim (1994) for expressions of simultaneity). Finally, as our data only included declarative affirmative statements, the interaction of adverbs with negation and aspect seems worth dealing with.

NOTES TO CHAPTER TWO

[1] Bybee (1985), in her comparison of meaning and function of grammatical morphemes across languages, observes that the distinction between perfective and imperfective, and subcategories of imperfective like continuous, habitual, etc. are more common than aspects like inceptive, iterative, etc. The typical/core inflectional aspectual system expresses two major contrasts: (i) the "contrast between a bounded or limited situation and an unbounded or in-progress situation," and (ii) the "contrast between an habitually-occurring and a merely continuing situation" (ibid:152). The diachronic progression of grammatical meaning suggests that there is a development from more specific to more general. The major prediction is that stem changes are more common in the perfective/imperfective distinction than in habitual/continuous forms. Bybee (1985:145) also notes that more specific, less reduced meanings are more common in periphrastic constructions. The implication is that perfective/imperfective is more general than continuous/habitual. Inceptive and iterative are not subdivisions of perfective and imperfective respectively. Universal categories though they may be, they are not fully integrated into the aspectual system.

[2] Aspect has also been considered from a functional perspective (cf. Foley & Van Valin (1984), Dik (1989)). Aspectual information is expressed either in terms of operators (grammatical means) or satellites (lexical means) at the relevant level of structure, since the clause is made up of several layers of formal and semantic representation. States of affairs (SoAs), corresponding to Smith's situation types, are designated at level two, the predicate level, where the verb appears in a predicate frame with its arguments specified (cf. Dik (1989)). Dik (1989) recognizes phasal (e.g. perfect, prospective, etc.) and quantificational (e.g. frequentative, habitual, etc.) aspectuality, in addition to the traditional distinction between grammatical aspect (perfective vs. imperfective) and Aktionsart (state of affairs). Imperfective is considered to be non-complete, non-bounded, divisible and open, as opposed to the perfective, which is viewed as complete, bounded, indivisible and closed.

[3] Prototype is an original type, form or instance that serves as a model on the basis of which other types, forms or instances may be judged. Solso (1994:237) states that experience with members of a category result in canonic representations. Students who were asked to draw cups and saucers drew "prototypical" ones, which represent the idealized image/master model, with which we compare other similar items. Obviously, not all members of a category have the same status. For example, a sparrow is more bird-like than a penguin, although both share the property of having wings. Both Dahl (1985) and Smith (1997) suggest the use of the notion of prototype for aspectual categories.

[4] In addition to the future form in French, the French Present tense conveys the neutral viewpoint, generally allowing for open readings and requiring a closed interpretation when temporal conjunctions are present (Mary starts to smile when Paul gets home.) as in (i) below.

(i)   Marie sourit toujours quand Paul arrive à la maison.
   -   Mary always smiles[pr] when Paul gets[pr] home.

Similarly in Chinese, when the syntactically optional viewpoint morphemes do not appear in the sentence, aspectual interpretation is flexible between open and closed readings.

[5] The classical Vendlerian four-way distinction includes statives, activities, accomplishments and achievements (cf. Binnick 1991, Rothstein (2004)).

[6] In addition to the three binary features in Smith (1997), Dik (1989) uses the features [+control] and [+ experience] to distinguish among SoAs. If it is within the power of the external argument to determine whether a SoA will obtain or not, this SoA is [+control]. In (i) John is the controller of the SoA, but in (ii) the tree is not.

(i) John opened the door.   [+ control]

(ii) The tree fell down.   [- control]

[7] The feature [+/- orientation point] proposed by Erguvanlı-Taylan (2001:112-119) specifies an endpoint distinct from telicity. The feature does not refer to boundedness due to a natural endpoint as in the case of telicity. It characterizes adverbs such as *henüz* 'yet/just,' *daha* 'yet/more,' *artık* 'from now on/any longer,' *bile* 'even/already,' *çoktan* 'already/for long,' and *zaten* 'already/anyhow' which do not bind situations but serve to "establish a reference point with respect to which the situation stated holds." (ibid:112).

[8] Previous analyses of Turkish adverbials have been mostly descriptive in nature, aiming at adequate categorization in morphological and functional terms (cf. traditional reference grammars like Banguoğlu (1990), Ergin (1993), Gencan (1979), and a descriptive grammar written within the framework of generative linguistics, Kornfilt (1997)). Banguoğlu (1990) focuses on the morphological means to derive adverbs and the meaning contributed by suffixes and mentions the general properties of adverbs as a word class and as converbs in subordinate clauses. Gencan (1979) assumes a purely functional approach in his description of Turkish adverbs, while Ergin (1993) considers adverbs as members of the general nominal/substantive class, only distinguished on the basis/categorial nature of the elements they modify within the sentence. In these studies, however, the semantic and syntactic properties of adverbs are not discussed at all. Kornfilt (1997), on the other hand, briefly mentions the syntactic relations of adverbials with other constituents of the sentence and with the main clauses in the case of subordinate adverbial clauses. Erguvanlı-Taylan (2001) categorizes aspectual adverbs on the basis of T/A features and notes that since a single morpheme may simultaneously express different functions in Turkish, adverbs are necessary for disambiguation or to specify the type of viewpoints, in addition to causing shifts in situation types.

[9] The analysis of adverbials in Turkish is not without problems. Even the status of adverb as a syntactic category has been questioned because almost any adjective can be used adverbially (cf. Kornfilt (1997)). Tremblay & Yükseker (2000) claim that there is no independent category of adverb in Turkish, but that they are not reducible to another category, either. They analyze adverbs as open functions/secondary predicates. Likewise, Ergin (1993) notes that adverbs are members of the general class of nominals/substantives just like adjectives: they are called "adverbs" due to their modifying function in phrases containing verbs, adjectives and other adverbs.

[10] Many of our example sentences will include T/A adverbials appearing in bold typeface. These adverbials will mostly be single word or phrasal adverbials, collected from the TDK dictionary of Turkish. In the TDK dictionary of Turkish less than 200 adverbials express temporal/aspectual or modal notions among the nearly 1300 adverbs listed, most of which are manner adverbials. Clausal adverbials expressing temporal and aspectual notions will not be dealt with. Neither will manner adverbials or those expressing modal notions be considered in the present study. The analysis is not meant to be an exhaustive one, though attention will be paid to discuss at least one example from category (cf. Chapter 6 for details).

[11] Similar to the time-relational approach, Johanson's (1971, 1994) conception of aspect is based on endpoint and interval properties of situations rather than aspectual/temporal features like duration or dynamism. Johanson (1994:250)

suggests introducing multiple reference points to make up for the inadequacies of Reichenbachian analyses of aspect based on three points E, R and S, i.e. event time, reference time and speech time, and three relations, namely simultaneity, anteriority, and posteriority. Johanson (1994:248) offers a tentative synopsis of the complex Turkish "aspecto-temporal" system. Since Turkish verb forms often express multiple meanings (aspect/tense/mood), no absolute categorization is possible. Johanson's (1994) definition of aspect is "*terminalperspektivisch*," involving E^i (terminus initialis/initial endpoint), E^f (terminus finalis/final endpoint), and E^c (cursus/interval). Note that this means taking the endpoint and internal stage properties of situations into consideration, similar to Smith (1997). The two viewpoints he adopts are *Intraterminalität* (imperfective) and *Postterminalität* (perfective). Intraterminalität (intra terminos/between endpoints) does not refer to endpoints because they are "hidden" i.e. endpoints are not reflected in *aktional* 'actional' respect (cf. Johanson 1971:101). On the other hand, Postterminalität (post terminum suum/at one point) means that the 'critical' endpoint of the event has already been crossed/passed. This 'critical' endpoint changes with Aktionsart, e.g. in cases like *öl-* (*final-transformative*) [+telic: completion] and *oyna-* (*non-transformative*) [-telic: termination rather than completion]. The critical endpoint is identical with the final endpoint, with the whole course already in view. In cases like *uyu-*, *yat-* (*initial-transformative*) [-telic, ingressive], on the other hand, the critical endpoint is identical with the initial endpoint, implying that the whole event could still be going on (cf. Johanson (1971: 194ff)). Note that this idea of a 'critical' endpoint independently appears in Klein (2000) and Klein et al. (2000) as the notion of "distinguished phase," which is in fact a means to collapse situation aspect into viewpoint aspect.

[12] Kornfilt (1997), adopting Comrie's (1976) definition of aspect, mentions two issues about Turkish: (i) Turkish verbal suffixes do not exclusively express aspect, as tense and mood may also be expressed by the same suffix, (ii) a single suffix does not always express the same aspect all the time. As a result, adverbs and/or context are used to disambiguate the meaning in the ambiguous verbal forms. In addition, where no specialized verbal form exists, periphrastic means such as auxiliaries or verbal compounds may used to encode a universal aspectual notion. As for types of aspect, in a section called "aspect as the expression of duration," Kornfilt (1997) considers perfective aspect, and various subcategories of the imperfective. She states that Turkish has verbal forms with perfective meaning but it is not certain whether it has consistent perfective aspect (ibid:355). As to imperfective aspect, there is no specialized marker for imperfective marker but different kinds of imperfectives get expressed by a number of forms. These are, to quote the definitions provided in the original text in parentheses, (i) habitual aspect (a situation which is characteristic for a considerable stretch of time), (ii) continuous aspect (nonhabitual imperfective aspect), (iii) progressive aspect (continuous aspect of a nonstative verb), (iv) ingressive aspect (beginning of a situation), (v) terminative aspect (end of a situation), (vi) iterative aspect, (vii) semelfactive aspect (a single occurrence of a situation), (viii) punctual aspect (a situation that is viewed as not being able to be analyzed temporally), (ix) durative aspect (a situation viewed as lasting in time), (x) simultaneous aspect (simultaneity with some other situation), (xi) rapid or sudden action (a situation changing rapidly or suddenly), (xii) durative action (a situation that has persisted over a period of time and still continues), and finally (xiii) telic aspect (situations that lead to a logical conclusion). It is implicit in the way she handles notions like semelfactive, iterative, etc. that she regards them as types of grammatical aspect not Aktionsart, similar to Cinque (1999). Note that the

distinctive aspectual/temporal features usually employed to distinguish between STs have been used as general criteria to classify these "grammatical" aspects.

[13] An interval may precede or follow another interval, or overlap with it. The overlap relation between two intervals may be total (equality) or partial (inclusion and proper inclusion) (cf. Klein (1992:537), Klein (1995:688, fn. 33), Chapter 3 for details.).

[14] Time has often been treated as an infinite straight line, usually assumed to move forward, from left to right (cf. Bull (1971), Comrie (1985) and Fillmore (1997)). According to this definition, time is linear, has infinite duration and may be divided into an infinite number of intervals of various length. Linguistically, time can be presented as having two directions, i.e. reversible (cf. Bull (1971, Comrie (1985) and Fillmore (1997) for the observing person and moving time metaphors.). In addition, there is a distinction between subjective time and objective time. Subjective estimates of time are vague, imprecise and variable because they are not based on generally accepted units of time but a person's own perception of time. For example, the length of a minute may vary from person to person and for the same person depending on his/her psychological mood/state. Objective time, on the other hand, is based on periodical natural phenomena like the revolution of the Earth around itself or the Sun, and is measurable in terms of generally accepted units of measurement like minute, hour, day, year, etc.

[15] In human perception/expression of time, a reference interval or a point of orientation (henceforth PO) is essential to keep track of the 'passing' time. As Bull (1971:7-8) notes, we may remember events or anticipate them, yet when we speak about situations, the speech event itself is observable and that is why the moment of speech is the primary anchor for all tense systems. This 'personal' point of orientation, which moves constantly forward, serves as the zero point of the infinite straight line, which extends in either direction. That is why we must establish order relationships and somehow specify referential temporal frames in time to keep record of the events we observe, recall or anticipate. When we use an event as a point of orientation, it follows that the event is contained within an interval and the rest of the intervals are either anterior or posterior to this particular interval. In short, the moment of speech, which will be called the time of the utterance (TU) in the present study, is the primary deictic point of orientation. It is possible to introduce other non-deictic points of orientation through adverbials as in (i) or other events as in (ii).
(i)   By 5, all the employees had left the building.
(ii)   The manager left the building after all the employees had gone home.
In (i) the adverb introduces a PO with respect to which the leaving event is anterior. In (ii) the event of the manager's departure is ordered with respect to the event in the embedded time clause. As will be made clear in Chapter 4, a non-deictic PO or the deictic TU are not directly related to the semantic assertion but Topic Time (TT)- yet another reference interval- is.

[16] The figure-ground relationship, which refers to the perception of objects as if they were standing out against a background, is the most basic organization imposed on the world by the observer. There are a number of differences between figure and ground. The figure has shape and is complete, coherent and more object-like, whereas the less distinct ground seems to extend behind the figure. In addition, the figure has a more solid color than the ground, is more dominant, more easily remembered and also seems nearer than the ground. Moreover, the figure is usually seen as having a contour. (cf. Weintraub & Walker (1966), Gordon (1989:51)). Solso (1994) notes that the strong tendency to see contours makes the brain "see" them where they do not exist. In addition, one of the corollaries of the Law of

Prägnanz ("good configuration" or "good figure") is closure, i.e. the tendency to perceive an incomplete figure as complete and unitary. In fact, according to the "Law of Prägnanz" perception moves towards simplicity, symmetry and wholeness. An observer will organize his/her perception of the world so that the world will seem as simple, symmetric, stable, and as orderly as possible. With respect to aspect, Talmy (2000b:153-154) defines the figure as "the salient moving or stationary object in a Motion event whose path or site is the relevant issue" and the ground as "the reference object in a Motion event, with respect to which the Figure's path/site is characterized."

[17] Demirdache & Uribe-Etxebarria (2000, 2001) represent the figure/ground contrast in terms of phrase structure and emphasize the role of spatio-temporal relations in tense/aspect (also cf. Traugott (1978) for an early study on spatio-temporal relations). We will refer to the conceptual framework of Demirdache & Uribe-Etxebarria (2000, 2001), where relevant, e.g. the instantiation of the figure vs. ground opposition in aspect.

[18] Krifka (1989) develops a theory within a model-theoretic semantics using a lattice structure developed by Link (2002) to formally account for the dichotomy between cumulativity and quantification. The contribution of Krifka (1989:88) is to define a lattice structure for events as well as for objects, in analogy to nominal reference. Events are taken as basic entities within a Davidsonian semantic tradition. Events are structured, like objects, as a join semi-lattice without bottom element (cf. Ramchand (1997:221-237) for a detailed formal treatment of nominal and event reference in Krifka (1989)). Events (E) and objects (O) are two non-overlapping kinds of entities. $\cup$ is the operation of join, $\subseteq$ is the relation 'part' and $\subset$ is the relation 'proper part.' Explicitly put, (i) $x \cup y$: the sum of x and y, (ii) $x \subseteq y$: x is a part of y (defined as $x \cup y = y$) and (iii) $x \subset y$: $x \subseteq y$ and $x \neq y$ (Also see Singh (1998) for an application of the theory.). Krifka (1989) also allows verb arguments and adverbial attributes to be represented in terms of thematic relations. These are two-place relations between events and objects. Three roles are defined: AG, PAT, IN, i.e. agent, patient, interior location, respectively.

[19] Lattice is a formal object in Boolean algebra used to represent both set-theoretical and truth-functional relations. (**Boolean**: of or pertaining to an algebraic combinatorial system treating variables, such as propositions and computer logic elements, through the operators AND, OR, NOT, IF, THEN, and EXCEPT. **algebra**: 1. A generalization of arithmetic in which symbols, usually letters of the alphabet, represent numbers or members of a specified set of numbers and are related by operations that hold for numbers in the set. 2. A set together with operations defined in the set that obey specified laws. (cf. The American Heritage Dictionary)).

[20] Time is one of the three entities which Krifka (1989) considers within the lattice-theoretic approach. The time lattice is atomic, i.e. it has identifiable minimal units. T_a is the set of all time atoms, i.e. individual points in time. On this set of time atoms, an ordering relation is defined, i.e. a linear temporal order. Krifka also defines a function τ from the extension of E to the extension of T. This is the temporal trace function that maps every event onto its temporal duration. We use this function to represent the difference between telic and atelic events. The terminal point of an event is that point in the temporal duration of an event such that all other points contained in the event's duration temporally precede it. This applies to all events because all events terminate in the world at some point. There is also a set terminal point (STP) which applies to certain event types, which have their own "natural" terminal points.

[21] Verkuyl's (1996) theory is based on the interaction between temporal and atemporal information. The feature [+/- ADD TO] expresses progress in time and is associated with the verb. The value of [+/- ADD TO] is determined in verbs that denote a sense of addition of some quality over time. For example, verbs like *eat*, *knit*, *walk* are [+ADD TO] and *want*, *hate*, *seem* are [–ADD TO]. As for the semantic contribution of arguments, the feature [+/-SQA] is introduced. The feature has a positive value for NPs that specify a clear delimitation of quantity such as *two sandwiches*, *an apple* are [+ SQA] while those NPs which do not involve any clear delimitation of quantity are [- SQA], e.g. *sandwiches, some beer*. Note that terminative aspect is determined when [+ ADD TO] and [+ SQA] are combined. (cf. Krifka (1989:76) notes that the problem with feature-based approaches such as that of Verkuyl (1996) is that they merely describe rather than explain the facts.)

[22] Vanden Wyngaerd (2001:62) argues that measuring out also involves secondary predicates. Observe the resultative small clauses in (i-ii).

(i) She cried. (activity, unbounded)

(ii) She cried the handkerchief wet. (accomplishment, bounded)

Vanden Wyngaerd (2001) argues that it is the resultative predicate rather than the internal argument that measures out an event. Resultative predicates must denote a bounded scale and bounded predicates can delimit an event by providing it with minimal parts. Accordingly, unbounded predicates cannot measure out events even if they potentially denote end points. In this study, secondary predication will not be dealt with (cf. Schroeder (2000)).

[23] Mittwoch (1982) notes that activities and accomplishments will have the same process verbs. A process verb without an object or with an object that lacks a quantifier is an activity as in (17b), while a quantified object results in an accomplishment as in (17a). She distinguishes between quantified and unquantified objects with the +/- values of the feature [delimited quantity].

[24] cf. Nilsson (1984, 1985) for object incorporation.

NOTES TO CHAPTER THREE

[1] Note that the definition does not say anything about the distance of TT from TU such that the dots merely represent order relations without any implication as to the length of the time interval between TT, TU or TS. Comrie (1985:8) states that there is no grammaticalized way to quantify the period between TT and TS or TT and TU, etc.

[2] In this study "overlap" relation between two times is represented by the slash as in (3b) while "contained in" relation is expressed by using brackets as in (5b). I will be using the slash and dots on the time line instead of Reichenbach's notation, i.e. comma indicating simultaneity and __ signaling an order relation. In the Reichenbachian representations given on the right-hand side in (8-19) below, S and E represent our TU and TS respectively, while R is the reference time.

[3] In Klein (1992, 1995, 2000) and Klein et al. (2000), the schemata in (1-19) are not given. However, when all the tense/aspect definitions are schematized, assuming that all three intervals are present in any T/A system, the time-relational approach appears as a neo-Reichenbachian theory except for the crucial difference in the definition of TT. Owing to the concept of visibility in Smith (1997), TT is associated with the semantic assertion in the perfective and imperfective and is essentially different from the Reichenbachian reference time (R). A modified definition of the perfective is proposed in this study based on this concept of visibility.

[4] Although any Boolean (e.g. AND, OR, etc.) combination of the order and overlap relations of TT, TU, and TS are possible, only some of them are attested in natural languages (cf. Klein et al. (2000:744), Reichenbach (1947)). One relational possibility left unexplored in the time-relational approach is "TS is contained in TT." Note that all definitions start with TT as the "subject". Obviously, this is not a problem for transitive order relations, i.e. "TT before TS" and "TS after TT" produce the same result. However, with the "contained in/overlap" relation, substituting TS for TT would produce rather different results. Klein et al. (2000:744) note that Russian perfective might be exhibiting this relation, namely "TS contained in TT."

[5] Following Smith (1997), perfect will be considered as a special construction and prospective will be argued not to constitute an independent viewpoint contra Klein. The definitions in (6-7) will be modified in Chapter 4 and it will be illustrated that perfective or imperfective viewpoints are superimposed on these constructions. In this chapter our aim is to focus on the representation of perfect and prospective as viewpoints without dealing with the drawbacks.

[6] Ramchand (1997) and Iatridou (2000) note that as a present TS is on-going at TU, it is by default imperfective. However, the choice of viewpoint aspect is subjective (cf. Smith (1983, 1986 and 1997)) such that an incomplete, on-going event may be presented perfectively or vice versa, irrespective of the actual state of affairs. In fact, the same situation may be expressed either perfectively or imperfectively as in *She sits in the armchair.* vs. *She is sitting in the armchair.*

[7] Comrie (1985:70-75) mentions the schematic ambiguity in the future perfect in English. (15b') in the body text may be felicitously used in three situations: i. The event will take place sometime between TU and "tomorrow" as in (15b), ii. the manuscript is being finished at TU, though the speaker is unaware of that fact as in (15c), and iii. the manuscript has already been finished, but the speaker does not know that as in (15d). This ambiguity occurs as the temporal reference of TS is left open: it must only be before the reference point but it can be located anywhere with

respect to TU. Consequently, it is not possible to assign absolute future time reference for TS. Such future temporal location is only an implicature and not part of the meaning of future perfect.

[8] The term 'present' in 'present prospective' is due to its definition in terms of an overlap relation between TT and TU. As was mentioned above, 'present' should be understood as non-past.

[9] Dik (1989:189) discusses prospective aspect under phasal aspect distinctions, which "bear on the phase in which a certain entity finds itself in relation to the occurrence of some SoA in which the entity participates." In (i-ii) below (Dik's 15, p.190), (i) states what will happen in the future, while (ii) is a prediction based on the information status of the speaker at TU.

(i)   One day, stocks will rise again.   [Future Tense]
(ii)   Stocks are going to rise again.   [Prospective Phasal Aspect]

[10] Dahl (1985:30) observes that Reichenbach's three-way distinction between E, S and R is not well-suited for describing aspectual notions. Klein (1995:679) notes that Timberlake (1985) (Timberlake (1985) Reichenbach and Russian aspect. In M. S. Flier & A. Timberlake (eds.) *The Scope of Russian aspect*, Colombus, OH: Slavica, 153-68.) makes a similar observation with respect to Russian aspect. There must be a "narrative time" (the time from which the speaker evaluates the aspectual character of the event). The relation between narrative time and event time may serve to classify aspect.

[11] Cinque (1999:199, fn. 9) discusses Vikner's (1985:86) (Vikner, S. 1985. Reichenbach Revisited: One, Two, or Three Temporal Relations, *Acta Linguistica Hafnensia* 19:81-98) system of tense which includes two reference times as opposed to other Reichenbachian approaches, noting that this system is capable of accounting for "would have done" as well. Vikner describes three binary relations: i. that between E and R2 (E can overlap with or precede R2)= Tense Anterior, ii. that between R2 and R1 (R2 can overlap with or follow R1) = Tense Future, and iii. that between R1 and S (R1 can overlap with or precede S) = Tense Past. Cinque (1999:199) presents a schematic representation of the restrictive system, reproduced below:

(i)   ....S/R1/R2/E............ present   works   (10b)
(ii)   ....S/R1.....R2/E....... future   will work   (9b)
(iii)   ....E/R1/R2.....S....... past   worked   (8b)
(iv)   ....E........S/R1/R2..... anterior   has worked   (16b)
(v)   ....E....R1/R2.....S.... anterior of past   had worked   (14b)
(vi)   ....R1.....R2/E.....S... future of past   would work   (17b)
(vii)   ....S/R1.....E.....R2... anterior of future will have worked (15b)
(viii) ....R1...E...R2.....S... anterior of future of past would have worked (--)

This system reduces Reichenbach's thirteen possibilities to eight ones. One other advantage of the system is to have reduced the three anterior future schemata in (15a-c) and posterior past ones in (17a-c) to only one representation each, thus eliminating redundancy. However, it is also observed that (i-vii) are almost the same as those of Reichenbach as the corresponding examples (10b, 9b, 8b, 16b, 14b, 17b, 15b) indicate. The only difference lies in (viii) where the second reference point does not overlap with one or more of the other three times. Note that in the rest of the forms R2 overlaps either with R1, E or S, and is never independently located on the time line. If reference time is defined merely as a time interval other than TU and TS, then incorporating a second R into the entire system seems to be redundant. A possible solution for "would have done" might be to introduce a secondary reference time only when required, possibly through adverbials.

[12] Swift (1963:146-149) notes that there are four post-predicate aspect enclitics in Turkish, namely *-(I)DI* (past aspect), *-(I)sA* (real conditional aspect), *-(I)mIş* (presumptive aspect) and *-(I)ken* (temporal aspect). As can be seen, his term "aspect" does not correspond to our aspect. As for the meanings of the morphemes, he mentions that the first one is used for states or actions that occurred in the past. His analysis also includes complex forms with *-DI*: *-ArDI* 'he would have worked/used to V,' *-mIşDI/DIyDI* 'he had V-ed,' *-AcAKDI* 'he was going to V and *-yorDU* 'he was V-ing.' His translations suggest the meanings of the forms. It is also interesting that he considers *-(I)ken* as a temporal marker. As for the *-mIş*, he notes that the state or action is only presumed, given indirect evidence or report. He mentions the *-mIşmIş* 'he had apparently V-ed,' *-AcAKmIş* 'He is reportedly going to V,' and *-yormIş* 'He was apparently V-ing.'

[13] Johanson (1994:248) provides a synopsis of Turkish "aspectotemporal" system. *-DI* is categorized as anterior; non-postterminal; praeteritum simplex. *-mIş* is called anterior; postterminal; praeteritum inductivum, while the form further marked with the evidentiality marker *-DIr*, i.e. *-mIşDIr*, which we do not deal with here, is called praeteritum constativum under the same category as *-mIş*. *-AcAK[DIr]* is categorized as prospective; futurum simplex. *-(I)yor* is non-anterior; Präsens 2 while *-mAKDA[DIr]* is non-anterior; Präsens 3. These two markers differ from the other non-anterior form, i.e. *-Ar/Ir* in terms of the value of the feature called Prägnant. Prägnanz is defined as "der Grad der aktionalen Konzentration am Orientierungspunkt" (the degree of actional concentration at PO). *-Ar/Ir* is "non-prägnant" and thus unsuitable to be presented as an on-going event at a PO; it is rather general and modal, expressing tendency, intention or epistemic modality as in *Düşersin* (You will/might/could fall) (cf. Johanson (1971:118ff.), Johanson (1994:255)). *-Ar/Ir* is the third non-anterior form called Präsens 1. *-DIyDI* is called anterior; non-postterminal; praeteritum mnemonicum. According to Johanson (1994:248), all the complex forms with *-DI* except for *-DI-yDI*, i.e. *-Ar/Ir-DI*, *-(I)yor-DI*, *-mAKDA-yDI*, *-mIş-DI*, *-AcAK-DI* and *-mIş olacaktı*, which we analyze here under periphrastic forms, are anterior-oriented under the general "anterior" category. The *-mIş-DI* form constitutes a subcategory on its own: anterior; anterior-oriented; postterminal; plusquamperfekt. *-AcAKDI* is anterior; anterior-oriented; prospective; futurum praeteriti (cf. Johanson (1994:248)). *-IrDI* (Imperfect 1), *-(I)yorDI* (Imperfect 2) and *-mAKDAyDI* (Imperfect 3) are all analyzed under anterior; anterior-oriented; intraterminal. Johanson (1994) does not deal with complex forms with *-mIş*. *-mIş olacak[DIr]* is prospective; prospective-oriented. *-mIş ol-AcAK-DI* is the only periphrastic form Johanson (1994:248) deals with: it is anterior; anterior-oriented; prospective; prospective-oriented.

[14] Yavaş (1980) adopts Anderson's (1973) (Anderson, J. 1973. *An Essay Concerning Aspect*, The Hague, Mouton.) definition of aspect where aspect is defined in terms of the relationship that holds between the E and R. In other words, aspect is secondary or relative tense: a situation is related to an already established reference point. On the other hand, tense is defined as the relationship between R and S. Temporal adverbs establish reference points ("axes of orientation") and the events and states are "located" relative to them. The main thesis of Yavaş (1980:8) is that the basic temporal distinction in Turkish is that between past and non-past, with *-DI* being the only past tense marker, while all the other forms in Turkish express either modal or aspectual notions.

[15] We will be limiting our discussion of the Turkish verbal T/A morphology to simple affirmative declarative sentences. Further details of the semantic distinctions can be found in the references cited. Various specialized mood markers such as *-sA*

(conditional), *–(y)A* (optative), *-AbII* (abilitative or possibility), and *–mAlI* (necessitative) will only be mentioned in passing.

[16] Yavaş (1980:19-20) reports that *–(I)DI* denotes a modal distance or doubt, in sentences such as (i). (i) can have a past or present reading, the only difference being that the readings with past temporal reference are unmarked and predictable. With *–(I)DI*, the speaker expresses doubt, as there is no currently available information about the validity of the proposition. As a simple form, *–DI* expresses factive mood and direct evidence (cf. Erguvanlı-Taylan (2001:102)).

(i)   Can çevreci-ydi/çevreci idi. (doubt)
         Can environmentalist-DI.
         'Can was/is an environmentalist.'

[17] Kerslake (1997:58), assuming the time-relational framework, notes that in conditional and temporal clauses, *-AcAK* is a marked form with a prospective aspect reading rather than future tense, while the aorist is the unmarked future marker in such clauses. In main clauses, *-AcAK* cannot be analyzed merely as a modality or prospective aspect marker (p.59), as it has temporal uses as well.

(i)   Ahmet **şu anda** kütüphane-de ol-acak. (presumption)
         Ahmet at the moment library-LOC be-FUT-3sg
         'Ahmet will/must be at the library at the moment.'

(ii)   Başbakan **yarın** Antalya'da ol-acak. (prediction)
         prime minister tomorrow Antalya-LOC be-FUT-3sg
         'The Prime Minister is to be in Antalya tomorrow.'

Yavaş (1980) notes that *-(y)AcAK* is used to make both presumptive statements about non-future happenings as in (i) and predictions about future events as in (ii). In (i) Ahmet is necessarily somewhere at TU, but we are not sure where, hence the presumptive statement about his whereabouts. On the other hand, (ii) involves an unrealized event which most certainly will take place. These modal meanings of *-(y)AcAK* is due to the semantic affinity between futurity and modality, both of which involve uncertainty. In other words, future events may only be presented as possible, with open interpretations (cf. Yavaş (1980:71)), as opposed to the definite assertions made about past events.

[18] Comrie (1976:64) notes that languages are not symmetrical about the time axis. If they were, we would expect prospective aspect to relate a state and a subsequent situation in the same way as the perfect relates a state to an anterior situation. Moreover, in contrast to the perfect, prospective allows adverbs to specify TS. The difference between simple future (will) and prospective aspect (going to) in English is that the former involves prediction while the latter expresses a present state with the possibility of an imminent future situation, which might not actually take place. These facts lead Comrie to argue that future and prospective aspect are different. However, note that Comrie's distinction is based on the knowledge status of the speaker during the speech event. Therefore, it seems that the difference between future and prospective is a modal rather than an aspectual one (also cf. Haegeman (1989), Nicolle (1997) for other views).

[19] The *–(I)yor* is also used to make imperative statements, i.e. a deontic modal function, as in (i).

(i)   **Derhal** buraya gel-iyor-sun ve bu sorun-u çöz-üyor-sun! (imperative)
         immediately here come-YOR-2sg and this problem-ACC solve-YOR-2sg
         'You come here immediately and solve this problem.'

[20] Yavaş (1980: 95-6) argues against an analysis of the aorist in reference to a real time line, as it indicates aspect, namely habituality, genericity, stativity, and mood rather than temporality. The *–Ar/Ir* has two modal functions: volition, as in (i) and

prediction, as in (ii) below. The question in (ii) is about the hearer's beliefs on the future possibility of an unrealized situation, i.e. an expression of a prediction about future events with weaker certainty (cf. Yavaş (1980:107)).

(i)   Çikolata ye-r mi-sin? Ver-e-yim mi? (volition)
        chocolate eat-AOR Q-part.-2sg give-OPT-1sg q. part.
        'Would you like some chocolate? Shall I give you some?'

(ii)   (Sence) savaş çık-ar mı? (prediction)
        in your opinion war break out-AOR Q-part.
        'In your opinion, will a war break out?

[21] Yavaş (1980:103) terms generic statements as omni-temporal since their truth value is constant for all times, while habitual propositions would be trans-temporal, given that their truth value remains constant throughout the period concerned.

[22] Yavaş (1980) notes that two criteria are involved in choosing among –(y)AcAK, -Ar/Ir, and –(I)yor in describing future events: i. degree of certainty involved in the event, and ii. type of knowledge the predictions are based on, i.e. evidentiality.

[23] Yavaş (1980) distinguishes between –DI (only verbal stems and only past tense) and –(I)DI (both verbal and nominal stems and only subjunctive mood). Erguvanlı-Taylan (1997:8) notes that the latter form can also express past tense. Likewise, Göksel (2001:169) analyzes -y- as the remnant of a verbal stem and notes that –DI is a verbal suffix that attaches to any verbal stem including -i. Sebüktekin (1971) recognizes two distinct morphemes –DI and –(I)DI with different distributions. The theoretical problem as to whether they are two distinct morphemes or a single morpheme with multiple functions is beyond the scope of the present study.

[24] Yavaş (1980:17) argues against a past-in-the-past analysis also because this leads to an analysis of both –DI morphemes as tense markers.

[25] Kornfilt (1997:350) notes that -mIş-DI is ambiguous between a past-in-the-past (tense) and past perfect (aspect). According to Aksu-Koç (1988:17) there are no relative tenses but aspects in Turkish. Kornfilt argues that the difference is universal and it must hold in Turkish as well. However, this discussion boils down to a discrepancy in defining tense and aspect. While Comrie's (1976) classical definition of aspect is essentially non-deictic, with no reference to speech time (cf. Binnick (1991:207-213)), neo-Reichenbachian analyses such as that of Klein's (1992, 1995, 2000) seem to be collapsing both tense and aspect into relative tense, where the situation is anchored to a reference time other than the deictic centre. Therefore, in the time-relational approach, there is no distinction between absolute and relative tense and there is no past-in-the-past tense. In short, –mIş-DI is indeed ambiguous, but between pluperfect and past perfective with a modal overtone.

[26] A discussion of conditionals is beyond the scope of the present study. Yavaş (1980) finds that –DI is used to mark counterfactuality as in (i):

(i)   Jale bugün/yarın/dün gel-se-ydi, Melek sevin-ir-di.
        Jale today/tomorrow/yesterday come-COND-DI, Melek rejoice-AOR-DI
        'If Jale (had) showed up today/tomorrow/yesterday, Melek would be/would
        have been pleased.'

As it is possible to use past, present and future adverbs in the same structure, –DI seems to bear a modal function rather than a temporal one in counterfactual conditionals (cf. Iatridou (2000)).

[27] –DI-ymIş is not possible. The two markers are semantically incompatible because inferentiality and certainty are mutually exclusive modal concepts.

[28] Lewis (1967:166) notes that ol- gives a greater suppleness to the tense system, by building periphrastic tenses and moods such as –(I)yor ol-malı 'must be V-ing', -AcAK ol-ur-sa- 'if (s)he is about to V,' -mIş ol-acak '(s)he will have V-ed.' He

further notes that *ol-* with the aorist marker yields an inchoative reading, e.g. *-Ir/Ar ol-du, -mAz ol-du, -AmAz ol-du, -mAz ol-ur.* Lewis (1967:108) argues that in periphrastic forms the use of the future, aorist and *-mIş* past bases can be justified as they are the participles of the respective tenses. The use of the non-participial – *(I)yor,* on the other hand, could derive from its being the aorist of the ancient *yorımak* 'to go, walk' historically.

[29] Kornfilt (1997) discusses the following periphrastic constructions: *-AcAK ol-du* (p.341), *-Ar/Ir ol-acak* (p.342), *-yor ol-acak* (p. 342, 381), *-yor ol-uyor-du* (p.363), *-mIş ol-muş-tu* (p.363), *-mIş ol-acak* (p.342, p. 350), *-mIş ol-uyor-du* (p.363), *-mIş oluyor* (p.364).

[30] Yet another issue to be raised is the morphological status of *ol-,* i.e. whether it is a morphological buffer with no meaning or a semi-lexical auxiliary which contributes its meaning into the periphrastic construction. Our data seem to provide evidence for a semantically relevant *ol-.* Relevant though it may be for aspectual interpretation, the investigation of the issue is beyond the scope of the present study (cf. Göksel (2001) and van Schaaik (2001)).

[31] As was noted above, *–DI-ymIş* is not possible due to semantic incompatibility and is omitted in the rest of the example sets.

[32] Cinque (1999:105-106) notes that some languages mark similar distinctions morphologically: Boro, Aleut and Ika have a verbal morpheme to mark the beginning of a process, i.e. "inceptive/ingressive"; Spokane and Mongo have "success" morphemes to indicate an accomplishment that takes place through effort; Wayampi has a "frustrative" (without success) affix; Coahuilteco and Fula/Fulfulde have morphemes to mark "pretensive" (to pretend, act as if) aspect.

[33] Lewis (1967:111-112) notes that in contrast to *–(I)yor* which can both express progressive and futurity, *–mAKtA* forms are only used to express actions in progress rather than future actions.

[34] van Schaaik (2001) notes that the combination of *–(I)yor and -mAktA* with the auxiliary *ol-* and a number of T/A markers are rare or rather infrequent in his electronic corpus.

NOTES TO CHAPTER FOUR

[1] The verbs of location in our terms have been referred to as "dynamic states" like *sit, stand, lie* + LOC in English (cf. Bach (2002:325)) or "verbs of posture and location" (cf. Smith (1997:33)). Smith (1997:33) notes that verbs of posture and location like *sit, stand, lie* and *crouch* have two readings: (i) they denote the result of a change of state in stative sentences and (ii) they denote the change of state in eventive sentences.

[2] Cinque (1999) argues that there are two types of completive aspect: *completamente* and *tutto* correspond to two types of completive aspect. In one type a telic process has reached completion. The object has been totally affected because the natural endpoint of the process has been reached as in *eat up the sandwich*. As for the second reading of the completive, we have a plural definite object with two possible readings: (i) the plural set has been totally affected (cumulative reading) or (ii) each member has been totally affected (distributive reading). Siewierska (1991:122) reports that in Polish there are two affixes each with distinct functions corresponding to these two kinds of completion, i.e. (i) singular completion: "right through" *completamente* and (ii) plural completion: "one after the other" *tutto*. In Turkish there are a number of adverbs that correspond to completion such as *toptan, hepsini, tümünü, bütününü, tamamını, bütünüyle, tamamıyla, tümden, topyekun* and *teker teker*. Only the last one seems to have a "one after the other" reading.

[3] The concept of total affectedness (cf. Krifka (1989), Ramchand (1997), Singh (1998:180)) means that all parts of an object must participate in the event and no parts of the object can be subjected to the event more than once, e.g. *eat apples*, although as a whole it can participate in multiple events, e.g. *wash apples*. In the case of *writing a letter*, the object is gradually created as the event evolves in time. Intuitively, then, graduality is the measuring out based on the relation between an event and parts of the object involved (cf. Singh (1998:178)). Krifka (1989:96) defines graduality as the combination of three properties. These are: (i) uniqueness of objects (the verb is related only to its own object), (ii) mapping to objects (the event gradually runs over the object (parts of eating an apple corresponds to parts of the apple) and (iii) mapping to events (all parts of the object are affected from the event.). Graduality is similar to Dowty's (1991) "incremental theme" and "measuring out" in the sense of Tenny (1994). The table below summarizes graduality in the sense of Krifka (1989:96, ex. 14).

example	SUM	GRAD	UNI-E	label
write a letter	X	X	X	gradual affected patient
eat an apple	X	X	X	gradual consumed patient
read a letter	X	X	--	gradual patient
touch a cat	X	--	--	affected patient
see a horse	X	--	--	stimulus

[4] Smith (1997) considers termination/completion of an event presented in the perfective as a necessary consequence of the aspectual reading. The final point of the situation may either refer to termination or completion, depending on the situation type involved in languages like English. On the other hand, in Chinese, termination and completion are expressed separately for all situation types.

[5] In fact, in SGaelic events and states are also morphologically distinct. While statives must be expressed periphrastically, events bear the perfective morphology (cf. Ramchand (1997)). Ramchand (1997:40) notes that there is a perfective/imperfective contrast in SGaelic and that the periphrastic construction

functions like the imperfective member of this system. The periphrastic construction passes all the tests for atelicity and is compatible with *for an hour* adverbials. In SGaelic, statives cannot be expressed by simple present tense, though the periphrastic present occurs with both events and states alike.

[6] The contribution of Case in defining grammatical aspect exhibits cross-linguistic variation (cf. Krifka (1989), Ramchand (1997), Singh (1998)). Likewise, the influence of morphology in quantificational reference is subject to cross-linguistic variation. For example, in German, the progressive is expressed with the partitive case as in (i), suggesting that partial representation is observed both in the nominal and verbal systems (cf. Singh (1998:177, ex. 9)). In other words, the partial view of an event in the imperfective (verbal morphology) is paralleled in the partial affectedness of the object marked with the partitive case (nominal morphology). As for Czech, perfectivity is only compatible with quantized definite objects as in (ii), i.e. no cumulative reference of objects is allowed in the bounded perfective aspect.

(i)   an einem Fisch essen
        at a fish eat
        'be eating a fish'
(ii)   Ota vypil vino
        Ota drank-PERF wine
        'Ota drank *wine/the wine.'

However, this is not to say that perfective is by default bounded, quantized and telic, while imperfective is unbounded, cumulative and atelic. In (i) the imperfective morphology has cumulative reference with a quantized object or an unquantized object. On the other hand, contrary to what is expected, perfective morphology in (ii) does not result in a telic reading.

(i)   Selin (bir) kazak ör-üyor. (imperfective: (un)quantified object; activity)
        Selin one sweater knit-PROG
        'Selin is knitting a sweater/sweaters.'
(ii)   Selin kazak/*kazak-lar ör-dü. (perfective, unquantified object, activity)
        Selin sweater/*sweater-PL knit-PRF
        'Selin knitted sweaters.'

[7] Bybee (1985:152) notes that the typical/core inflectional aspectual system expresses two major contrasts: (i) the "contrast between a bounded or limited situation and an unbounded or in-progress situation," i.e. perfective vs. imperfective, and (ii) the "contrast between an habitually-occurring and a merely continuing situation." The latter contrast involves subcategories of the imperfective.

[8] These are the paths tentatively proposed by Bybee et al. (1994) for the development of reduplication. However, they also seem to give us clues as to the evolution of the expression of imperfective.

[9] Crosslinguistically, Bybee et al. (1994:126) find that progressive refers to a situation on-going at the reference time. Although continuous aspect is also about a situation on-going at the reference time, it is more general than the progressive because it can also include stative predicates (ibid:127). Kornfilt (1997:357) defines continuous aspect expressed by *–(I)yor* as "non-habitual imperfective aspect," noting that continuous aspect should be preferred to the term progressive since continuativity includes both statives and nonstatives, which seems to be the case for the Turkish *–(I)yor*.

[10] Activities are interesting in that they are dynamic, which makes them distinct from states. On the other hand, they are atelic and thus markedly distinct from achievements and accomplishments (cf. Smith (1999)).

[11] There seems to be cross-linguistic variation in the morphological expression of the subinterval property. While English allows a situation to be considered as on-going "in an extended sense," Spanish progressives do not allow any interruption (cf. Bybee et al. (1994:137)).

[12] Jespersen, O. 1931. *A Modern English Grammar on Historical Principles Part IV*. London:Allen and Unwin.

[13] As was mentioned above for activities and states, there is one mereological difference between progressive activities and statives. The preliminary activity in (31c) contrasts sharply with statives in (21) and (26a-c) with respect to graduality (cf. Krifka (1989)). While the amount of the water in the pool increases gradually as the activity progresses in time in (31c), the subjects do not get more sick or taller as time goes by, as in (21) and (26a).

[14] This possibility is accounted for by the prototype approach in Smith (1983, 1986, 1997), where marked choices in aspectual viewpoints may involve linguistic expressions associated with an idealized ST or the prototypical properties of a viewpoint. For example, non-stative events can be presented as states, e.g. *I am in the process of writing a letter*, and states can be presented as events, e.g. *I am hating zoology* (cf. Smith (1997)). Note the use of the locative expression *in the process of*, which is related to stativity, in the former, and the progressive *–ing* morphology, which implies dynamism, in the latter.

[15] Iterativity must be perfective because for something to be counted and repeated it must be considered as a unified whole (cf. Comrie (1976)). Siewierska (1991:118) notes that quantificational aspect does not contribute to defining SoA. Instead, it takes the SoA as a whole and quantifies it in some way. In our analysis of habitual and frequentative, the situation is taken as a whole and quantified within a given period of time. As for adverbs, they quantify over sets and/or series of situations.

[16] The notions habitual, frequentative and generic seem to have a number of semantic overlaps. The habitual involves (i) multiple events, (ii) explicit frequency adverbs, (iii) being characteristic of a period/structural description, and (iv) modal subjective evaluation. The frequentative involves (i) multiple events, (ii) explicit frequency adverbs and (iii) simple observation of facts/phenomenal description. The generic involves (i) multiple events, (ii) no explicit frequency adverbs and (iii) characteristic property of an entity/structural description. Note that while iterative/repetitive refers to a single repeated instance of a situation, habituals express situations customarily repeated on different occasions. In the frequentative, we make reference to individual perfective situations which can be individually and explicitly quantified. As the repetitions increase, we move towards a subinterval property where a single subinterval characterizes the whole event as in the case of habitual aspect. In the absence of adverbials, we only imply the existence of multiple situations. Bybee et al. (1994:238) note that as "habitual subevents are indefinite both in number and in time, they can be viewed as extending over possible worlds." This reference to possible worlds points in the direction of epistemic modality. Apparently, the weaker the link with the real temporal axis gets, the more "modal" functions the aspectual categories seem to acquire.

[17] Spanish has two copular forms: *estar* is used for stage-level predicates, as in (ii), and also as an auxiliary in the progressive tense, as in (i), while individual-level predicates are expressed with *ser*, as in (iii) (cf. Bull (1971), Comrie (1976)).

(i)	Juan está durmiendo.	'Juan is sleeping.' (present progressive)
(ii)	Juan está maleducado.	'Juan is being naughty.' (temporary property)
(iii)	Juan es maleducado.	'Juan is naughty.' (characteristic property)

[18] Yavaş (1980:101, exx. 11-12, 1982) mentions that the aorist is used to express typical, inherent characteristics of an entity or situation as in (i), while *–(I)yor* is used for simple statement of observed behavior as in (ii). She argues that the perception of some behavior as characteristic of an entity leads us to view it as a permanent property of that entity (ibid:103-4). Therefore, the real distinction is the subjective evaluation of a property as being permanent rather than the property actually being permanent.

(i)   Ben-im kasab-ım iyi et sat-ar
       I-gen butcher-my good meat sell-aor
       'My butcher sells good meat'

(ii)   Benim kasabım iyi et sat-ıyor (prog)

Note that this relates to how the speaker perceives the real world, leading to a subjective modal qualification of the proposition in the ideal/possible worlds of the speaker. Thus, the link with the real temporal axis starts to disappear. That is why aorist has been called "timeless tense" (also cf. fn. 16 above).

[19] Although there is no mereological difference between habituals and generic statements, iterative habituals can optionally co-occur with frequency adverbs as in (47), while generic statements cannot as in (48) above.

[20] Note that we are moving from the world of real events into the world of possible events. This is in fact the move from realis into irrealis mood (cf. Fleischman (1995) who discusses the use of imperfective for irrealis (cf. also Iatridou (2000)).

[21] Recall that a reference point/a point of orientation is essential for any order relation. The primary deictic point of orientation found in all tense systems is TU. As for non-deictic POs, they can be introduced by adverbials or other events.

[22] Klein (1992:546) proposes a pragmatic solution for the "perfect puzzle" within the time-relational framework. This puzzle is the ungrammaticality of explicit past time specification in the English present perfect although the situation clearly is anterior to TU. Klein (1992) criticizes various solutions such as the scope solution or the current relevance solution. For example, the scope solution says that the clash between the time specified by adverb and perfect morphology results in ungrammaticality. He argues for the P-Definiteness Constraint, which says that the expression of TT and TS cannot both independently specify the location of the situation along the time axis. In other words, in a sentence such as *Chris has left at six.* the ungrammaticality is due to the fact that TS and TT are independently P-definite (position-definite). He further notes that adverbs like *just, recently* are acceptable with perfect because they do not locate the event on time axis, thus are not position-definite. However, note that this is not really different from the scope solution because the ungrammaticality is attributed to a clash between adverb and morphology in both solutions. As for the current relevance connotation of present perfect, Klein (1992:539) states that present perfect makes a claim about TT including TU, thus making the situation relevant at TU.

[23] Smith (1997:186) notes that in English perfect constructions the relation between the reference time (R) and the anterior situation is limited to two cases. In the first case, a temporal adverbial denotes a reference interval, within which the situation obtains. The situation may be open, expressing an imperfective viewpoint or informationally closed, with perfective viewpoint, as in *Peggy has been in Asia since January.* (ibid:188, ex. 48a). In the second case, the situation denotes the "lower bound" for R; the situation must be closed, i.e. perfective, as in *The team has reached the top.* (ibid:187, ex. 44c). Note that Smith (1997) argues that a perfect construction has a viewpoint, as opposed to Klein (1992) who considers perfect as a viewpoint per se.

[24] Giorgi & Pianesi (1997:84) syntactically distinguish between two groups of languages. Group A languages include languages like English which exhibit the perfect puzzle. In these languages Tense appears in the syntax as part of the hybrid AGR/T and there is a stricter temporal reading. For example, if TU is simultaneous with TT, a present perfect meaning arises (ibid:85). For Group B languages like Italian, German or Dutch (cf. Comrie (1976)), there is no perfect puzzle. These languages have a split-INFL such that present forms do not exhibit any T morpheme, i.e. there is no T category in syntax. This causes present tense form to be assigned a default interpretation.

[25] Iatridou et al. (2000:9) make a basic distinction between Universal Perfect (henceforth UP) and Existential Perfect (henceforth EP). When the situation holds *throughout* the reference interval, i.e. the Perfect Time Span (henceforth PTS), a UP reading is attained, as in *For two weeks, John has been in Boston* (ibid:25, ex. 23b). On the other hand, when TS holds at least once *within* the reference interval, we obtain EP, which has three varities, namely (i) experiential perfect as in *I have read Principia Mathematica* (ibid:5, ex. 3a), (ii) perfect of recent past as in *He has graduated from college* (ibid:6, ex. 5). and (iii) perfect of result as in *I have lost my glasses* (ibid:6, ex. 4).

[26] Kornfilt (1997) discusses four types of perfect in Turkish, stressing the importance of adverbs and context in interpretation. The first one is resultative perfect which is used to express the current result of a prior situation. The second type is experiential perfect which describes a situation that has obtained at least once. It may be expressed periphrastically such as *hiç* + *-DI* as in (i). Moreover, *bulun-* is a lexical means to express experiential perfect, while *-mIş-lIK-POSS ol-* is a colloquial expression, as in (ii).

(i)   **Hiç** bu-nu dene-diğ-in ol-du mu?
         ever this-ACC try-DIK-2sg be-PRF q. part.
         'Has it ever been the case that you tried this?' (literal)
         'Have you ever tried this?' (actual reading)

(ii)   **Hiç** bu-nu dene-miş-liğ-in var mı?
         ever this-ACC try-PERF-deriv. 2sg exist. q. part.
         'Have there been any instances of your trying this?' (literal)
         'Have you ever tried this?' (actual reading)

A third type is continuative perfect which is used for situations which began in the past and is still continuing. This is expressed with the present progressive *–(I)yor* and a number of distinct adverbs such as *-DAn beri* or *–DIr* 'since.' The duration meaning is expressed by the adverb. The final type Kornfilt mentions is perfect of recent past, i.e. a situation that has been completed a short time ago. She also mentions the mirror image of perfect of recent past, i.e. immediate prospective (*-mAk üzere*) used to express a situation that will soon be completed. Future perfect is expressed periphrastically by *-mIş ol-acak*.

[27] The pragmatically felicitous counterpart of (67b) is in (i).

(i)   Baba-nız hayat-ta mı?
         father-2pl life-LOC q. part
         'Is your father alive?

[28] Cinque (1999:96) mentions other phasal aspects, such as retrospective aspect and proximative aspect. Retrospective is defined in the following way: "the event has taken place a short while before some reference time," and may be expressed by particles, affixally or periphrastically. As was mentioned above, Turkish does not have a distinct grammaticalized form for retrospective but adverbs such as *daha yeni* 'a short while ago,' *henüz* 'just,' *az önce* 'just a while ago,' *yakınlarda/son*

zamanlarda 'recently,' *daha geçen ay* 'just last month,' etc. As for proximative aspect, the situation takes place just after the reference time, as denoted by adverbs such as *yakında/az sonra/birazdan* 'in a while/soon,' *hemen/derhal* 'immediately,' *hemen şimdi* 'right now,' and *şimdi* 'now.' With respect to prospective aspect, Cinque (1999:99) stresses the existence of "a point just prior to the beginning of an event." It is cross-linguistically expressed by affixes, particles, auxiliaries, periphrastic constructions, like the English "be going to" (cf. Comrie (1976:64ff)). Note that as far as the relation between TS and PO is concerned, prospective and proximative both require a PO just before TS. In fact, there does not seem be any difference between the two except for the lexical meaning of adverbs, i.e. proximative indicates a subjectively shorter temporal distance. In sum, it seems that Cinque (1999) does not introduce new phasal aspects but renames perfect of recent past as "retrospective" and present prospective as "proximative."

[29] In the English perfect, statives are ambiguous between open and closed readings as in *Cem has been in London since 2003*. In the open reading, TS holds *throughout* the adverbial interval from the LB until TU. In the closed EP reading, TS holds *within* existential closure. In other words, the state has obtained at least once within the Perfect Time Span (PTS). A similar situation can be observed with stative verbs in (i-iii) below.

(i)   Mary has stood on her head for an hour.   (EP, UP)

(ii)   **Bir saat-tir** tepeüstü dur-uyor. (UP)
         one hour-DIr upside down stand-IMPRF
         'He has been standing on his head for an hour.'

(iii)   **Bir saat** tepeüstü dur-du. (EP)
         one hour upside down stand-PRF
         'He has stood on his head for an hour.'

In the UP reading of (i), Mary has spent the last hour standing on her head. In the EP reading, at some time prior to TU, there has been a Mary-stand-on-her-head-for-an-hour event (cf. Smith (1997:189, ex. 51b)). The use of adverbials and morphology in Turkish specifically differentiates between the EP and UP readings, as illustrated by (ii) and (iii).

[30] Dik (1989:190) defines phasal aspects as the actualization of an SoA (ST in our terms) with respect to a given reference time. Siewierska (1991:118) notes that phasal aspect "contributes to specification of SoA but with reference to another SoA whose *internal constituency is not affected by aspectual operator* (italics mine)." This definition stresses (i) the necessity of a PO with respect to which TS is ordered on the temporal axis and (ii) the fact that the PO does not affect the internal temporal constituency but rather provides orientation for TS.

[31] Giorgi & Pianesi (1997:93) define present perfect in terms of a certain property which holds of the subject at a given time (TT) and which arises due to the subject being a participant in the event. Interestingly enough, they note that in perfect sentences if TT and TS do not coincide "the assertions concerning the event at stake (rel. TS) can be separated from assertions concerning the subject (rel. TS or TT)". This means that with the simple tenses, TT coincides or contains TS so that the participation of the subject in the event is viewed together with TS itself (ibid:94). Even more interestingly, they state that the contribution of perfect is to make available a TT distinct from TS (ibid:95). Note that this is highly relevant to my argument. I argue that TT must be defined as a PO rather than the time of assertion in phasal aspects because there is no overlap but order relation between TT and TS is in these aspects.

NOTES TO CHAPTER FIVE

[1] Smith (1997) recognizes two types of derived-level STs: (i) lexical focus, and (ii) interpreted ST shifts. In the present chapter we focus only on interpreted ST shifts. Lexical focus reflects a partial view of a ST, namely with (i) initial, (ii) middle and (iii) final focus. The initial focus is illustrated by (i-iv) below. While (i) is ingressive, expressing the beginning of an event, (ii) is inchoative, expressing the coming about of a state, through the derivational morpheme *–lAş* 'to get, become.' As for (iii), the sunset is presented statively, i.e. in the process of setting. The final endpoint of an event is focused in (iv) by the verb *sona er-* which is inherently telic. Smith (1997) calls such lexicalized markers of telicity "super-lexical" morphemes.

(i)   Oyun-umuz başla-mak üzere-dir.
        play-1pl start-INF about-DIr (certainty).
        'Our play is about to start.'

(ii)   Oyuncu-lar-ımız giderek usta-laş-ıyor-lar.
        player-1pl gradually master-DERIV-PROG-3pl
        'Our players are gradually becoming masters.'

(iii)   Gün bat-ma-da.
        day sink-INF-LOC
        'The sun is setting.'

(iv)   Gösteri-miz son-a er-miş-tir.
        show-1pl end-DAT reach-PRF-DIr (certainty).
        'Our show has ended.'

[2] In the temporal schemata adapted from Smith (1997:13) (cf. Chapter 2), I stands for initial endpoint and F for final endpoint and R the state resulting from the prior event. The broken line represents successive stages of events, while the unbroken line represents undifferentiated period of states. In the rest of the chapter, brackets denote the boundaries of an interval while the symbol (|) denotes the set terminal point of the event/a change of state. The continuous line within the brackets symbolizes the time span that is denoted by an adverbial, which may or may not overlap with the course of the situation, depending on the ST and viewpoint marker.

[3] Smith (1997:28) notes that when a certain amount of space is covered, a new location is reached. However, when some time passes, there is no such result. For example, both (i) and (ii) are accomplishments measured/bounded in terms of the location and distance arguments, while (iii) is an activity, although it is temporally bounded. Smith (1997:27) also states that such temporally bounded situations are similar to telic events because they have finite endpoints but are not like telic events because there is no change of state or result state. This suggests that time and space are not perceived in the same way.

(i)   I walked to school.

(ii)   I walked (for) 3 miles.

(iii)   I walked for 3 hours.

[4] Intrinsic bounds (telicity) and implicit bounds (perfective viewpoint) are independent, looking at the French data in (i-ii) adapted from Binnick (1991:190). The intrinsically bounded achievement in (i) can be perfectively or imperfectively presented, just like the intrinsically unbounded activity in (ii).

(i)   Pierre arriv-ait./est arrivé.   (imperfective/perfective with telic VC)
        P. arrive-imparfait/passé composé
        'Pierre arrived.'

(ii)   Pierre jou-ait./a joué.   (imperfective/perfective with atelic VC)
        P. play-imparfait/passé composé
        'Pierre played.'

[5] The categorization of the semelfactive seems to be problematic (cf. Rothstein (2004)). On the one hand, semelfactives are single stage situations with no result. Therefore, they are atelic. On the other hand, Smith (1997:29) notes that they are intrinsically bounded because of the single stage involved. If an intrinsic bound corresponds to the natural endpoint in telic events, then semelfactives cannot be intrinsically bounded. Semelfactives have been treated as a special class of atelic achievements by Vendler (1957) and Dowty (1979). With respect to Turkish data, semelfactives are like instantaneous activities because they shift into multiple-event activities when they appear with durative adverbs. On the other hand, they also behave like achievements in many other cases (cf. interpreted ST shifts below). (Vendler, Z. 1957. Verbs and Times. Philosophical Review. In 1967, *Linguistics and Philosophy*. Ithaca:Cornell Univ. Press., Dowty, D. 1979. *Word Meaning and Montague Grammar*. Dordrect:Reidel.)

[6] In Navajo, telicity is not grammaticalized. Instead, there is a pattern of multiple lexicalization that neutralizes it for durative events (cf. Smith (1997:297)). There are three STs: states, durative events and instantaneous events. Quantized reference and total affectedness do not distinguish atelic events from telic ones: NPs do not distinguish quantized objects from cumulative ones and termination is not distinct from completion. Adverbs are not only durative but also involve completion. In spite of all that language-specific variation, the notion of telicity is available to the speaker in the form of highly specific verb bases (ibid:313).

[7] Smith (1997:33-34) mentions two extended uses of statives: (i) derived statives, and (ii) habituals (cf. Chapter 4). The former category expresses genericity, pertaining to kinds and individual-level predication, e.g. *Babies drink milk*. The latter category relates to a pattern of events such that they are analogous to a state that holds throughout an interval, e.g. *I wake up early*. Another point to be mentioned about statives is inchoativity (expressed lexically by verbs like *get*, *become* or morphologically by affixes). In these cases, a change of state results in a state distinct from that before the change.

[8] Although achievements are non-durative, consisting of a single moment, Ramchand (1997:236-7) notes that achievements have a complex internal structure with a source and target state and that the change of state should be understood as a single transition between two states. Klein et al. (2000:747) also consider achievements as two-phase lexical contents (also cf. Rothstein (2004) for a detailed discussion). In this study, it is argued that achievements do not have an internal structure and that the source and target states are not part of the situation itself.

[9] Bybee et al. (1994:69) note that perfect of result differs from the perfect in expressing the immediate relevance of a past action to the present moment.

[10] Smith (1997:21-2) notes that human understanding of events is based on causation, in that the course of situations interacts with agent, instrument and the action (cf. (i) ibid:22, ex. 6). The way the lexical span of a situation is mapped onto the causal chain is also related to the classification of causatives. For example, causatives involve a cause, agent and change of state, while inchoatives express the coming about of a state, excluding the agent. While ingressive/inceptives express the entry into a situation, egressives denote the exit from a situation. As for the resultative, it extends the whole span of a situation in addition to the resultative complement.

(i)   The Causal Chain and Situation Types: typical examples

CAUSE	SUBJECT	ACTION	INSTRUMENT	OBJECT	RESULT
Activity-----------------laugh------------------------					
Semelfactive---------------knock at the door-----------------					
Accomplishment-----------------climb a tree--------------------					
Achievement			-------cure the patient-------		
State					----know French

Although the causal chain is not properly integrated into Smith's (1997) theory, it remains a topic of interest requiring further research.

[11] The English counterpart, i.e. the present perfect continuous, makes visible an interval of the anterior situation. However, as it is no longer raining or the person is not walking any more, there is no open interpretation of the situations. As Smith (1997:187) states, "one infers the final endpoint of the event although it is not semantically visible."

[12] In English, (i) is infelicitous if uttered in 2004, because Einstein can no longer bear the participant property. Smith (1997:108) proposes a pragmatic felicity condition to account for this infelicity. However, in Turkish whether the subject is alive or not does not affect the felicity of the expression, suggesting that the problem in (i) is specific to English and that the felicity condition is not universally required.

(i)   Einstein has lived in Princeton. (Smith (1997:106, ex. 20))

(ii)   Einstein Princeton'da yaşa-mış-tır.
       E. Princeton-LOC live-PERF-EVID
       'Einstein has (the property of having) lived in Princeton.'

[13] The participant property is also related to causation and transitivity. Talmy (2000b:78, ex. (56)) discusses three aspect-causative types, namely being in a state (stative), entering into a state (inchoative), and putting into a state (agentive). The resultant state in the sense of Parsons (1990) (cf. ex. 27 in the main text) is not among those basic types, being the complex notion of "being in a state of having undergone a change of state." On the other hand, Hopper & Thompson (1980:293) note that perfect and past perfect in English are low transitivity tenses. Moreover, they find that both perfects and passives, as reflected in their diachronic relation, involve a "participant in the state of having been affected by an event's occurrence" (ibid:294). This is conspicuously reminiscent of Smith's (1997) participant property and also her definition of perfect of result as derived stativity. Interesting though they may be, these points will be left for further research.

[14] Comrie (1976) notes that in Chinese statives assume an ingressive meaning when used in the perfective. In Turkish, there seems to be a difference between stative predicates in triggering the ingressive reading. For example, in (i) yaşa- does not have an ingressive reading with the locative NP as opposed to bil- in (ii).

(i)   Ali burada yaşa-dı.   (example due to E. Erguvanlı-Taylan (p.c.))
       Ali here live-PRF-3sg
       'Ali has lived/lived here.'

(ii)   Ali yanıt-ı bil-di.
       Ali answer-ACC know-PRF-3sg
       'Ali has known (found) the answer.'

[15] A non-durative situation is incompatible with imperfectivity because it has no internal structure. Therefore, the inherent punctuality of a situation restricts the range of possible interpretations when it occurs in the imperfective. Thus, the semelfactive cough can only be interpreted as describing a series of coughs rather than a single instance.

[16] Rapoport (1999:661) notes that durative adverbials with accomplishments focus on the activity part and not the endpoint of the situation. However, this is not to say that some adverbials only specify some subintervals of situations. It is due to the incompatible feature values of adverbs and STs. Although the expression *bir saat* has been preferred for simplicity and consistency throughout the examples, also note that (55) would be more felicitous with the adverb *bir saat boyunca* 'throughout/during an hour' than with *bir saat* 'for an hour.' This is probably due to the independent bounds found in the adverb although it is not explicitly marked, which brings it closer to *in an hour* adverbs.

[17] In contrast, in SGaelic, the viewpoint parameter has more weight than STs and adverbials do. In fact, the viewpoint markers are sensitive to the value of the intrinsic bound, thus making ST information redundant. If a situation is unbounded, it does not appear with the bounded morphology and vice versa. This might even be interpreted as the grammaticalization of the intrinsic bound in SGaelic. This is in contrast with Navajo where the intrinsic bound is lexicalized into the verbal complexes.

NOTES TO CHAPTER SIX

[1] For Smith (1981:216) temporal/aspectual interpretation is incomplete without adverbial specification of time. In other words, both tense and adverbials are necessary to determine the reference time (RT). If there is an incompatible [Tense + Adverbial] composite or if there is a dependent adverbial, an RT is established based on information from the context. Adverbials establish the relational value of the reference time (RT) and/or specify RT. They also give the relation between TS and RT and/or specify TS. Last of all, they determine temporal reference by anchoring to TU or some other PO.

[2] Frame is not a novel term in tense/aspect studies. The term "frame" appears in former work such as Binnick (1991) and Dahl (1985) as denoting an interval of time with which TS is associated. Note that our use of the term Frame is different from that of Dahl's (1985). Dahl (1985:30) notes the significance of determining a temporal frame in the interpretation of sentences. The embedded clause "when I arrived" in Dahl's (1.16) below gives the reference point and "during the preceding week" is the temporal frame- a time period within which the E points-the two attempts to phone- are located. This is an example of temporal frame established through the use of an overt temporal adverbial.

(1.16) When I arrived, Peter had tried to phone me twice during the preceding week.

[3] Smith (1981) distinguishes three categories: (i) deictic, (ii) clock-calendar and (iii) dependent adverbials. The first category includes adverbs like *yesterday, today, tomorrow* which are directly anchored to TU. Clock-calendar adverbs like *on Tuesday, in* 1990 are anchored to a specific PO in time. Dependent adverbials like *later, earlier* are interpreted depending on the information in the context.

[4] Binnick (1991) classifies temporal adverbials into five groups on the basis of their referential properties within the discourse. Deictic adverbs like *now* are interpreted relative to TU, while referential adverbs like *at midnight* are not directly anchored to TU. The third class includes anaphoric adverbials like *then* or embedded adverbial clauses. They are considered anaphoric as they refer to a reference time already mentioned in context. In contrast, chronological adverbials like *in 1998* or *on the last day of the vacation* are dependent for full interpretation on some chronological framework or given information assumed in the relevant discourse. The last category includes forms with indefinite temporal reference such as *all day long* in (i-ii) below.

(i) Bu-nlar-dan iste-r-sen [**bütün gün**] ye, kilo yap-mı-yor.
This-PL-ABL want-AOR-COND-2sg whole day eat, weight do-NEG-IMPRF
'If you want you can eat these the whole day and you won't put on weight.'

(ii) [Olay-dan sonra-ki gün [**bütün gün**]] uyu-du.
Incident-ABL after-SUF day whole day sleep-PRF-3sg
'The day after the incident he slept all day.'

In (i), the adverb *bütün gün* has no definite time reference and simply refers to a duration whose maximal boundary (cf. Klein (1992)) is twenty-four hours. In (ii), on the other hand, the adverb refers to the complete 24-hour interval of the day right after the incident. Note that Smith's (1981) clock-calendar adverbs include Binnick's referential, temporally indefinite and chronological adverbials and the class of dependent adverbs is identical with anaphoric adverbials of Binnick (1991).

[5] In (i), the past marker *–DI* establishes the relational value of the (definite) clock-calendar adverb (cf. Smith (1981)) with respect to TU: A is understood to be the

Sunday preceding TU rather than any indefinite Sunday prior to TU. In fact, in order to get the latter reading, the indefinite *bir* is needed, as illustrated by (ii).

(i)   Hamit yarış-ı [**Pazar günü**] kazan-dı.
        Hamit race-ACC on Sunday win-PRF-3sg
        'Hamit won the race on Sunday.'

(ii)   Hamit yarış-ı [**bir Pazar günü**] kazan-dı.
        Hamit race-ACC a Sunday win-PRF-3sg
        'Hamit won the race on a Sunday.'

[6] All T/A markers seem to impose a number of restrictions on the adverbials they occur with. However, in narrative discourse some of these restrictions can be swept aside as in <Önceki gece TRT-2'de bir program var. Dört edebiyatçı, sanatçı ve eleştirmen, köşe yazarlığı konusunu çeşitli boyutlarıyla irdeli-yor.> 'There is a programme on TRT2 the other night. Four writers, artists and critics discuss the issue of columnist in various dimensions.' (E. Çölaşan. *Hürriyet*, 15.11.01). In addition, as in (i), the imperfective *–(I)yor* is ambiguous with clock-calendar adverbs (denoting days of the week) for some speakers, who get a habitual reading, in addition to the default TU-oriented reading. The most natural way to get a habitual reading would be to use the plural marker on the adverb, as illustrated in (ii)

(i)   [**Salı günü**] çalış-m-ıyor.
        Tuesday work-NEG-IMPRF-3sg
        'He isn't working this Tuesday.'   (default reading)
        'He doesn't work on Tuesdays.'   (marginal habitual reading)

(ii)   [**Salı gün-ler-i**] çalış-m-ıyor.
        Tuesday day-pl-3sg work-NEG-IMPRF-3sg
        'He doesn't work on Tuesdays.'   (default habitual reading)

[7] When it comes to establishing time reference in complex sentences with an embedded clause controlled by a main predicate, we need to mention Yavaş (1980: ch. 7). She notes that time reference in relative clauses and that-complements is ambiguous: The temporal anchor may either be the TU or the time expressed in the matrix clause. In fact, when the temporal reference of the matrix and embedded clauses do not coincide, then the unmarked interpretation arises where we anchor to the matrix time. In sum, Yavaş (1980) finds that time reference in embedded clauses in Turkish is dependent on the main clause time and in cases where it is not possible to anchor the main clause time, TU functions as the anchor.

[8] *Haftaya* 'next week' is a frozen expression in present day Turkish but it consists of *hafta* 'week' and the Dative marker *–(y)A*.

[9] *Bugün* 'today' is a frozen expression in present day Turkish but it is actually made up of the deictic adjective *bu* 'this' and *gün* 'day.'

[10] These terms are borrowed from physics (cf. Bueche (1983:1)) but their physical definitions seem to be analogous to the linguistic meaning. Also see Bull (1971) for the use of the same terms for different functions.

[11] Erguvanlı-Taylan (2001) considers the unbounded SQAs of the present study in three groups based on their distribution. The first group includes *bir hafta için*, and *bir haftalığına*, which are acceptable only with activities and states and impose no viewpoint restrictions. Adverbs like *aylarca, üç saat, iki yıl* of the second group are felicitous with activities, statives and shifted semelfactives. The third group including *iki gün boyunca* is felicitous with all situation types except for achievements.

[12] This adverb seems to be in complementary distribution with the adverbs in (i). These adverbs refer to the intended duration of the situation, while the adverbs in (ii) indicate the actual duration of the situation. This seems to be the adverbial analogue

of the distinction Dahl (1981:84) makes between *Grenzbezogenheit*, i.e. being directed toward a goal/limit and *Erreichung einer Grenze*, i.e. having reached a terminal point. There is a distinction between a potential (intended/probable) terminal point and an actually achieved terminal point.

(i)　　**İki hafta-lığına/iki hafta için/*iki hafta** Roma'ya gid-iyor.
　　　two week-DERIV/two week for/*two week Rome-DAT go-IMPRF
　　　'S/he is going to Rome for two weeks.'

(ii)　**İki hafta boyunca/iki hafta/??iki haftalığına/*iki hafta için** Roma'da-ydı-m.
　　　two week throughout/two week Rome-LOC-PRF-1sg
　　　'I was in Rome for two weeks.'

In English, both meanings can be expressed by *for an hour* adverbs, as illustrated by the translations of (i-ii) (cf. Dahl (1981), Smith (1997)). In Turkish, there is no ambiguity because of (morphologically) specific adverbs which compensate for the underspecificity in T/A morphology. Note that intention is a modal notion and both the relation between aspect and modality and their adverbial expression remains a topic for further research.

[13] Note that events and their objects vary in terms of affectedness (cf. Krifka (1989), Ramchand (1997)). For example, the same apples can be washed many times (activity) but the same pullover cannot be knit many times (accomplishment), though the same wool can be used many times to knit different pullovers each time.

[14] To express the same meaning, it is also possible to use an ordinal number adjective and nominalize the verb as in (i).

(i)　　Bu bizim **son iki yıl-da** [üçüncü] görüş-me-miz.
　　　this our last two year-LOC third meet-NOM-1pl
　　　'It's the third time we have met in the last two years.'
　　　'This is our third meeting in the last two years.' (literal)

[15] Both postpositional structures *-DAn beri* and *-A kadar* involve magnitude and rightward direction but we are misled by the boundaries because the spatiotemporal relation between the boundary expressed by the complement and the postposition is different in each case. Demirdache & Uribe-Etxebarria (2001) mention that figure/ground relations may differ depending on the relative direction of TU/PO with respect to the complement, which is taken as the **centre**. In (i) below the complement of the postposition establishes a centripetal relation with the PO while in (ii) the spatiotemporal relation is centrifugal. We would have the opposite relations if TU/PO were taken as the centre.

(i)　　[1690]a kadar　　　.......PO———→1690 (centre).......... (centripetal)
　　　'until 1690'

(ii)　[dün]den beri　　　........dün (centre)———→TU.......... (centrifugal)
　　　'since yesterday'

[16] All T/A adverbials seem to involve independent temporal bounds (boundaries) but not all of these bounds are made linguistically explicit. Boundary is not to be identified with telicity (cf. Erguvanlı-Taylan (2001:112) on the feature [+ orientation point]). Telicity is the property of situation types with a natural endpoint and is compositionally realized in the VC. In this study, boundary is defined as an explicit/implicit independent endpoint specified by adverbial means. These boundaries are independent of the endpoints involved in situations but they do interact with the boundaries of situations, if any.

[17] *-DAn itibaren/ -Ø itibariyle* 'as of' are also expressions that specify an explicit LB. However, they differ from *-DAn beri, -DAn bu yana* 'since,' in terms of the referential information contained in the NP complement. While *-DAn itibaren/-Ø*

itibariyle 'as of' are acceptable both with expressions of anteriority and posteriority, as illustrated in (i-ii), *-DAn beri, -DAn bu yana* 'since,' do not allow NPs expressing posteriority with respect to TU, as illustrated in (i-ii).

(i) [Geçen yıl-dan **beri/geçen yıl itibariyle**] sonuç-lar internet-te yayımla-n-ıyor.
   last year-ABL since/last year as of result-PL internet-LOC publish-PASS-IMPRF
   'The results have been (published) on the net since last year/as of last year.'

(ii) [Gelecek ay-dan ***beri/itibaren**] kumarhane-ler kapalı.
   next month-ABL *since/as of casino-PL closed
   'Casinos will be closed *since next month/as of next month.'

NOTES TO CHAPTER SEVEN

[1] Dahl (1985:3) states that an imprecise category is "a category which cannot be defined in such a way that for every member of x of its domain (that is, the set of things to which the category can be meaningfully applied), the definition determines a truth-value to the statement that x belongs to the category in question." Dahl (1985:7) stresses the advantage of treating the logic of imprecise concepts by means of Boolean algebras because in this way the properties of such algebras can be assumed. There may be a number of criteria defining a concept, which result in imprecision. If we "sharpen" a concept, we obtain a precise concept. In terms of Boolean algebra, this is a homomorphism, i.e. a function which maintains the relations between the elements in the algebra, leading to a minimal two-element lattice, i.e. a representation of a precise concept, which can be assigned the binary values of 1 and 0. Note that Krifka (1989) also uses a semi-lattice representation to account for nominal reference and temporal constitution in the sense of Link (2002).

[2] For example, in (i) the speaker has chosen to present the event perfectively and imply total affectedness of the object involved in the action. This is choosing the unmarked linguistic means to express a prototypical perfective accomplishment. On the other hand, in (ii) the speaker has chosen to present the accomplishment imperfectively, with focus on the preliminary process and no implication as to the completion of the object. This is choosing the marked linguistic means, marking the event as non-prototypical, and hence the ST shift into activity.

(i)   Usta oyuncağ-ı en iyi ağaç-tan yap-tı. (accomplishment)
        master toy-ACC most good wood-ABL make-PRF-3sg
        'The master made the toy from the best wood.'

(ii)   Usta oyuncağ-ı en iyi ağaç-tan yap-ıyor-du. (accomplishment → activity)
        master toy-ACC most good wood-ABL make-IMPRF-PRF-3sg
        'The master was making the toy from the best wood.'

[3] Unmarked and marked choices are found not only in aspectual expression but also in the world of objects. For example, cumulative reference to a mass object, e.g. *some water*, and quantized reference to a count object, e.g. *two books (each)*, are unmarked choices. On the other hand, cumulative reference to a count object, e.g. *some books*, and quantized reference to a mass object, e.g. *a glass of water*, are marked choices. The following table summarizes the unmarked and marked choices for viewpoints, STs and objects.

Prototypical categories	Unmarked choices	Marked choices
Viewpoints		
Perfective	Telic STs, quantized reference	Atelic STs, cumulative ref.
Imperfective	Atelic STs, cumulative reference	Telic STs, quantized reference
Situation types		
State	Imperf., *for an hour* adverbs	Perfective, *in an hour* adverbs
Activity	Imperf., *for an hour* adverbs	Perfective, *in an hour* adverbs
Achievement	Perfective, *in an hour* adverbs	Imperf., *for an hour* adverbs
Accomplishment	Perfective, *in an hour* adverbs	Imperf., *for an hour* adverbs
Objects		
Mass	Cumulative reference	Quantized reference
Count	Quantized reference	Cumulative reference

[4] Interestingly enough, Erkman-Akerson & Ozil (1998:288-289) use the term *"dilimlenmemiş zaman"* 'unbounded time/time without intervals (literally unsliced

time)' to describe the –*Ar/Ir* marker. This shows that the cumulative reference is distinguished, despite differences in terminology and theoretical framework.

[5] Demirdache & Uribe-Etxebarria (2000:63) discuss st'át'imcets, a language of the northwest Pacific, where there is no grammatical tense. Temporal reference in a sentence is determined by (i) time adverbs, (ii) aspectual particles, (iii) aspectual class (ST) of the predicate and (iv) nominal deixis (ibid: 63, fn. 33). For example, in (i) (Demirdache & Uribe-Etxebarria (2000:63, ex. 86a)) the stative predicate can only have a present tense reading, and the time adverb in (ii) (Demirdache & Uribe-Etxebarria (2000:63, ex. 86b)) triggers a past tense reading.

(i)   á7xa7   [ti kel7áqsten-s-a   ti   United States-a]
              strong   DET chief-3sg.POSS-DET   DET   US-DET
              'The chief of the United States is powerful.'
              '*The chief of the United States was powerful.'

(ii)   á7xa7   [ti kel7áqsten-s-a   ti   United States-a] i-1940-as
              strong   DET chief-3sg.POSS-DET   DET   US-DET   in 1940
              'The chief of the United States was powerful in 1940.'

If the VP were telic, i.e. an achievement or an accomplishment, the natural reading would be past, whereas an activity predicate would have either a past or present reading (ibid:63, fn. 34). As can be seen, in this language, the STs trigger their unmarked viewpoint and tense choices.

[6] Adopting prototype theory, Aguirre (2002) notes that primary meanings of verbal morphemes develop first, followed by secondary meanings. For example, achievements are acquired first, followed by accomplishments and then statives. The perfective is first used for [+telic, -dur] events (achievements), and then for [+tel, +dur] accomplishments. The distinction among [+/-tel, +/- dur] situations is acquired even later. This suggests that both STs and viewpoints share the same temporal/aspectual properties but they diverge in different languages and develop into independent parameters.

[7] Wallace (1982) notes that there is a great advantage in attempting to explain grammatical organization in terms of the figure/ground contrast because generality is highly desirable in scientific explanation. As the figure/ground distinction accounts for a number of phenomena in two different areas, i.e. visual perception and linguistic organization, it should be preferable to some principle which applies to only one area.

[8] Wertheimer, Köhler and Koffka were the leading theorists of Gestalt (usually translated as 'configuration') psychology, which focuses on the wholeness of perception: "The whole is greater than the sum of its parts." (cf. Weintraub & Walker (1966)). In fact, relationships among stimuli rather than their absolute values are significant in perception. The theory tries to account for our perception of the world in terms of innate properties of human beings. In the case of an object moving before our eyes, the motion takes time and takes place in space. As such, time and space are frameworks within which objects move and events are ordered (cf. Gordon (1989:47)). For example, those people who have recovered their sight after blindness can distinguish figure vs. ground immediately, while they may have difficulty in seeing the world as it is. This suggests an inborn organization of our visual capacities to a certain extent (cf. Gordon (1989)), at least as far as the contrast between figure and ground is concerned.

[9] Ramchand (1997) also notes that different object positions correlate with different aspectual interpretations, which need not concern us at the moment.
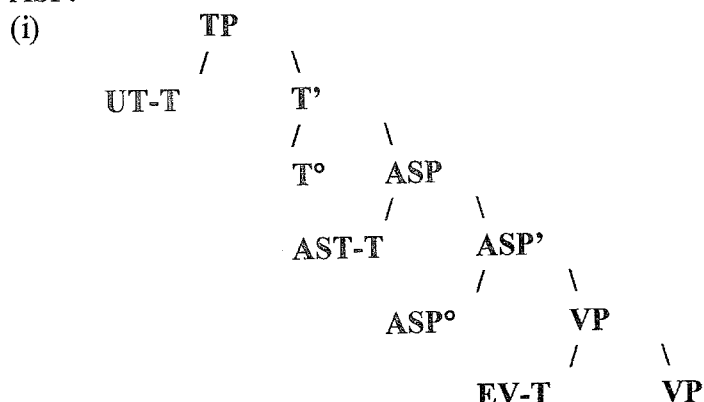
[10] Cinque (1999) argues in favor of the strong position that there is a universal hierarchy of functional projections, whose specifier positions host semantically

related adverbials. For Cinque, finding evidence for a functional morpheme for some aspectual distinction in a single language seems to be a sufficient condition to posit a universal functional projection to host that morpheme and a semantically related adverbial in its specifier position. However, few languages grammaticalize notions such as conative, inchoative, ingressive, etc. Therefore, it seems more likely that there is a universal set of functional projections which particular languages select from.

[11] Alexiadou (1997) discusses the properties and the position of adverbs in clause structure within the antisymmetry framework. She distinguishes between specifier and complement (temporal, manner, and locative) adverbs. The Adverbial Licensing Principle states that specifier adverbs are directly merged in the specifier position of an appropriate functional head. Complement adverbs, on the other hand, are merged as V-complements and then raise to a specifier position, so that they can be licensed. They can also be licensed through incorporation (a head-to-head relation). The complement vs. specifier distinction is more broadly formulated in terms of A- vs. A'-elements respectively. It is then expected that complement adverbs interact with A-movement (e.g. object shift) and specifier adverbs with A'-movement (e.g. wh-extraction).

[12] Ernst (2002) proposes a theory of the distribution of adverbial adjuncts in the Principles and Parameters framework, noting that adverbials adjoin freely to any projection in accordance with a few syntactic principles accounting for their linear order and hierarchical position.

[13] A proposal similar to that of Iatridou et al. (2000) is made in Demirdache & Uribe-Etxebarria (2000, 2001). The most interesting point to notice in the tree in (i) are the labels assigned to functional projections and their respective heads. The terms UT-T, AST-T and EV-T correspond to our TU, TT and TS respectively. Note that these time intervals appear in the specifier positions of related functional projections, namely TU, TT and TS occupy the specifier positions of TP, ASP, and VP respectively. Naturally, this means that time intervals are considered on a par with any XP. They further defend the idea that aspect and tense both project their argument structure in syntax in terms of the isomorphic structural representation illustrated in (i). They also mention that in languages where there is no tense or aspect morphology, adverbs appear in the above mentioned specifier positions. In that sense, their approach converges with that of Iatridou et al. (2000). On the other hand, this approach is also similar to our approach not only because they adopt the time-relational approach but also because they allow adverbs to be associated with time intervals. Adverbs appear in the position of the time interval with which they are associated, e.g. an adverb associated with TT will occupy the specifier position of ASP.

(i)
```
                 TP
               /    \
        UT-T         T'
                   /    \
                 T°      ASP
                       /    \
                  AST-T      ASP'
                           /    \
                       ASP°      VP
                               /    \
                            EV-T     VP
```

[14] Note that this idea is a weaker form of the claims by Cinque (1999). Like Cinque (1999), Iatridou et al. (2000) argue that 'surface' position of adverbs is a reflection of their 'base' positions in the phrase structure. In contrast to Cinque (1999), however, functional projections seem to be restricted to VP, PerfP and TP, at least within the limited scope of their study.

[15] Iatridou et al. (2000, fn.23) mention that Vlach (1993) (Vlach, F. 1993. Temporal Adverbials, Tenses and the Perfect. *Linguistics and Philosophy 19*:231-283.) distinguishes another level of adverbials which specify the present/past information in a sentence, i.e. Tense-level adverbials.

[16] Iatridou et al. (2000:19) note that perfect morphology is obligatory for Perfect-level adverbials such as *since*. Some adverbs seem to be ambiguous as to which level they belong to in English. For example, *since*-adverbials can yield a UP or EP reading irrespective of their position in the sentence, i.e. sentence-final or sentence-initial. On the other hand, adverbials like *for an hour* can be either Perfect-level or Eventuality-level, depending on their position. In fact, they are ambiguous between UP and EP readings at sentence-final position but unambiguous sentence-initially, as illustrated in (i-ii) below (cf. Iatridou et al. (2000:25, ex. 23)).

(i)   John has been in Boston for two weeks. (Ambiguous: E- and U-Perfect)

(ii)   For two weeks, John has been in Boston. (Unambiguous: U-Perfect only)

[17] It has often been noted that adverbs may either be associated with TS or a reference interval (cf. Dahl (1985), Smith (1981), Binnick (1991), Klein (1992), de Swart (1999) among others). In English, adverbs associated with the reference time (R) appear sentence-initially, i.e. are IP-adjoined, and are pragmatically associated with topic or background. On the other hand, adverbs associated with the event time usually appear within the VP and are in focus (cf. de Swart (1999)).

[18] Kornfilt (1997:350) notes that –*mIş-DI* is ambiguous between pluperfect and past-in-the-past (remote past) in Turkish, though she does not specify the exact semantic context. In Chapter 3 it was argued that there is no aspectual category as "past-in-the-past" and that –*mIş-DI* is ambiguous between pluperfect and past perfective with a modal distance overtone.

[19] As (16b') is more felicitous with the manner adverb *dikkatle* 'carefully' immediately preceding the verb, the unexpected ungrammaticality of (16b) might be due to the semantic nature of the VQA, which does not modify the verb but the event.

[20] The ambiguity in time-relations seems to be restricted to pluperfect only. We might ask why there is no ambiguity in present perfect or future perfect or prospective. Note that all these aspectual constructions are potentially ambiguous by definition if the ambiguity is due to an order relation between PO and TS and because it is not clear whether A overlaps with PO or TS. We might provide the following explanation. In present perfect, PO overlaps with TU. Thus, we have direct evidence that TS does not overlap with PO but for its final endpoint only in the UP reading. As for future perfect, TS must be before PO in all cases, and the adverb can only indicate the PO by which TS must obtain. If we knew the exact location of TS, we would use the simple future. When it comes to prospective, we have seen that future forms are hardly distinct from each other due to the asymmetry mentioned by Comrie (1976:64).

[21] The preliminary data in (i-v) below suggest that further research is required into the semantic and pragmatic implications of the interplay of viewpoints, situation types and adverbs within context. For example, the perfective state in (i) sets the ground for the perfective achievement in (ii), whereas the pluperfect in (iv) is the background for the perfective state in (v).

(i) [A1 **Dün akşam**] Beste öyle [TS1 yorgun-du] ki
     yesterday evening Beste so tired-PRF part.
     'Yesterday evening Beste was so tired that ...'

(ii) [A2 **saat dokuz-da**] [TS2 yat-tı.]
     hour nine-LOC go to bed-PRF-3sg
     '... she went to bed at nine.'

(iii) [A3 **Sabah saat beş-te**] (**hâlâ**) [TS3 uyu-yor-du].
      morning hour five-LOC (still) sleep-IMPRF-PRF-3sg
      'At five a.m. she was (still) sleeping.'

(iv) [A4 **Saat yedi-de**] ise [A5 **çoktan**] [TS4 kalk-mış-tı];
     hour seven-LOC part. already get up-PERF-PRF-3sg
     'But at seven a.m. she had already gotten up; ...'

(v) [TS5 tam form-u-nda-ydı].
     full form-LOC-PRF-3sg
     '... she was in her best condition.'

APPENDIX: THE DATA

POSITION ADVERBS	
ADVERBIAL	*ENGLISH TRANSLATION*
akşam, akşam saati, akşam üstü/üzeri, akşam üzeri, akşam üstü, akşamleyin	in the evening
akşama doğru, akşamdan	towards the evening
bilahare	later
bugün	today
bugünlerde	nowadays
dün	yesterday
elan	now, just
eskiden, evvel zamanda, evvelce, evvelden, evveli, evvelleri, vaktiyle	in the past
gece, geceleyin	at night
geçende, geçenlerde	the other day
gündüzleri, gündüzün	during the day time
günlerden bir gün, günün birinde	one day
güzün	in the autumn
halen	now, at the moment
ikindi üstü, ikindiyin	in the afternoon
ilerde, ilerde	in the future
imdi	now
kışın	in the winter
öğle üstü, öğlende, öğleyin	at noon
Pazartesi, Salı, ...	Monday, Tuesday...
Ocak, Şubat, ...	January, February, ...
sabah, sabahleyin	in the morning
sabaha doğru/karşı	towards the morning
yaz kış	throughout the year
yazın	in the summer

SQAS (FREQUENCY)	
ADVERBIAL	*ENGLISH TRANSLATION*
akşamları	in the evenings
geceleri	at nights
sabahları	in the mornings
yazlı kışlı	throughout the year

akşamlı sabahlı	day and night
asla, hiç, katiyen	never
bazen	sometimes
bazı bazı	from time to time
çoğu kez/zaman, çoğun, çoğunlukla	often
daima, hep, oldum olası	always
dünyada	never and ever
ebediyen, ilelebet, sittinsene, sürgit	forever
ekseriya	usually
ender, seyrek, seyrekçe, nadiren	rarely
genellikle, umumiyetle	generally
günaşırı	every other day
ikide birde	all the time, too frequently
muntazaman	regularly
sık, sık sık, sıkça	frequently
akşamdan akşama	every evening
geceli gündüzlü	day and night
günü gününe	daily

VQAS	
ADVERBIAL	*ENGLISH TRANSLATION*
ahir, ahiren	lately
akşama sabaha	soon
artık	from now/then on
çoktan	already
çoktandır, hanidir	for a long time now
daha	just, so far
demin, deminden	a while ago
demincek	a short while ago
hâlâ	still, so far
henüz	just, a while ago (+), not yet (-)
şimdi şimdi	only recently
şimdiye kadar/dek	so far
yeni, yeni yeni, yenice, yeniden yeniye, yenilerde	recently
birazdan	in a while, soon
şimdi, şimdicik	now, a while ago, just

LEXICAL/GRAMMATICAL MEANS TO CREATE ADVERBS	
WORD	*ENGLISH TRANSLATION*
NP-(n)In akabinde, NP-(n)In ardınca, NP-(y)I takiben, NP-(y)I müteakiben	following
NP boyunca	during
NP-DAn beri	since
NP-(y)A doğru	towards
NP-DAn evvel, NP-DAn önce	before, ago
geçen NP	past NP
NP içinde, NP içre, NP zarfında	within
NP-DAn itibaren, NP itibarıyla	as of, starting from
NP-(y)A kadar, ta NP-(y)A .. dek/değin	until
NP-DAn sonra	after
NP sularında	around

GRADUALITY ADVERBS	
ADVERBIAL	*ENGLISH TRANSLATION*
azar azar, yavaş yavaş	slowly, gradually
giderek, gitgide, gittikçe, zamanla	gradually
günden güne	day by day
kısmen	partially
külliyen, tamamen, tamamıyla, top yekun, topluca, toptan, tümden, hepten, büsbütün	totally

CONTINUITY VS. ITERATIVITY ADVERBS	
ADVERBIAL	*ENGLISH TRANSLATION*
akşama kadar	continually, the whole day
aralıklı	intermittently
aralıksız, arasız, biteviye, boyuna, durmadan, fasılasız, sürekli, ha babam, ha bire, bitevi, süresiz	continually, permanently
dönüşümlü	at regular shifts
gene, gine, yine, yeniden, tekrar	again
peyderpey, teker teker	piece by piece, one by one
sırasıyla	respectively

T/A ADVERBS WITH SUBJECTIVE EVALUATION	
ADVERBIAL	*ENGLISH TRANSLATION*
an be an	every second
ancak	earliest
az daha, handiyse, neredeyse	almost
bile	already
bu günlük	for today
dün bir bugün iki	only recently
dünden	even from yesterday
er geç, evvel ve ahir	sooner or later
erken, erkenden, erkence	early
evvela, ilk, ilkin, ilkten,	first
geç	late
gider ayak	while leaving
günü birliğine, günü birlik	for the day
güpegündüz	in broad daylight
ha bugün ha yarın	in no time
ilk önce, öncelikle	first of all
önceden, önceleri	in the beginning
sonradan, sonraları	later on
sabahın köründe	at the earliest time of the morning
sabahlık	for the morning
şimdiden tezi yok	immediately
tam sırasında	right on time
yeni baştan	all from the beginning
zamanında	on time
zamanlı	in time
zamansız	at an inconvenient time
şimdiden	starting from now
şimdilik	for the time being
temelli	totally (for good)

BIBLIOGRAPHY

Aguirre, C. 2002. The Acquisition of Tense and Aspect Morphology: A Key for Semantic Interpretation. In M. D. Voeikova & W. U. Dressler (eds.) *Pre-and Protomorphology: Early Phases of Morphological Development in Nouns and Verbs*. Munich:Lincom Europa. 163-176.

Aksu-Koç, A. 1986. The Acquisition of Past Reference in Turkish. In D. Slobin & K. Zimmer (eds.) *Studies in Turkish Linguistics*. Amsterdam: John Benjamins. 247-264.

Aksu-Koç, A. 1988. *The Acquisition of Aspect and Modality: The Case of Past Reference in Turkish*. Cambridge: Cambridge Univ. Press.

Aksu-Koç, A. A. 1994. Development of Linguistic Forms: Turkish. In R.A. Berman & D. I. Slobin (ed.) *Relating Events in Narrative: A Cross-linguistic Developmental Study*, New Jersey: Lawrence Erlbaum Associates Inc. 329-385.

Aksu-Koç, A. A. & C. von Stutterheim. 1994. Temporal Relations in Narrative: Simultaneity. In R.A. Berman & D. I. Slobin (ed.) *Relating Events in Narrative: A Cross-linguistic Developmental Study*, New Jersey: Lawrence Erlbaum Associates Inc. 393-455.

Alexiadou, A. 1997. *Adverb placement: a case study in antisymmetric syntax*. Amsterdam: John Benjamins Publishing Company.

Anderson, S. 1982. The 'Perfect' as a Universal and as a language-specific category. In P. J. Hopper (ed.) *Tense-Aspect: Between Semantics and Pragmatics*. Amsterdam: John Benjamins Publishing Company. 227-264.

Arslan, C. 2001. The 'Perfect' in Turkish. ms.

Arslan, C. 2003. "Perfect" in Turkish: the real puzzle. ms.

Aygen-Tosun, G. 1998. *The Split INFL Hypothesis in Turkish.* Unpublished M. A. Thesis in Linguistics, Boğaziçi Univ.

Bach, E. 2002. The Algebra of Events. In P. Portner & B. Partee (eds.) *Formal Semantics: The Essential Readings.* Oxford: Blackwell Publishing. 324-333. (reprint)

Bache, C. 1982. Aspect and Aktionsart: towards a semantic distinction. *Journal of Linguistics 18*: 57-72.

Banguoğlu, T. 1990. *Türkçenin Grameri.* Ankara: TTK Basımevi. (1st ed. 1974).

Bauer, G. 1970. The English 'Perfect' reconsidered. In *Journal of Linguistics 6*:189-198.

Bennett, M. & B. H. Partee. 2004. Toward the Logic of Tense and Aspect in English. In B. H. Partee (ed.) *Compositionality in Formal Semantics.* Oxford: Blackwell Publishing. 59-109. (reprint)

Binnick, R. I. 1991. *Time and the Verb: A Guide to Tense & Aspect.* Oxford: Oxford Univ. Press.

Binnick, R. I. 1976. How Aspect Languages Get Tense. In S. B. Steever, C.A. Walker, S.S. Mufwere (eds.) *CLS Papers from the Parasession on Diachronic Syntax.* Chicago: Univ. of Chicago Press.

Bonomi, A. 1997. Aspect, Quantification and When-clauses in Italian. *Linguistics and Philosophy 20*: 469-514.

Bueche, F. J. 1983. *College Physics.* (7th ed.) Singapore: McGraw Hill Book Co.

Bull, W. 1971. *Time, Tense and the Verb.* Berkeley: Univ. of California Press.

Bybee, J. 1985. *Morphology: a Study of the Relation between Meaning and Form.* Amsterdam: John Benjamins Publishing Company.

Bybee, J., R. Perkins, & W. Pagliuca. 1994. *The Evolution of Grammar: Tense, Aspect*

and Modality in the Languages of the World. Chicago: The Univ. of Chicago Press.

Carlson, G. N. 2002. A Unified Analysis of the English Bare Plural. In P. Portner & B. Partee (eds.) *Formal Semantics: The Essential Readings*. Oxford: Blackwell Publishing.35-74. (reprint)

Chierchia, G. & S. McConnell-Ginet. 2000. *Meaning and Grammar: An Introduction to Semantics*. Cambridge: The MIT Press.

Cinque, G. 1999. *Adverbs and Functional Heads: A Cross-Linguistic Perspective*. Oxford: Oxford University Press.

Cinque, G. 2001. A Note on mood, modality, tense and aspect affixes in Turkish. In E. Erguvanlı-Taylan (ed.) *The Verb in Turkish*. Amsterdam: John Benjamins Publishing Company. 47-59.

Cohen, A. 1999. Generics, Frequency Adverbs and Probability. *Linguistics and Philosophy 22*: 221-253.

Comrie, B. 1976. *Aspect*. Cambridge: Cambridge Univ. Press.

Comrie, B. 1985. *Tense*. Cambridge: Cambridge Univ. Press.

Dahl, Ö. 1981. On the Definition of the Telic-Atelic (Bounded-Nonbounded) Distinction. In P. Tedeschi & A. Zaenen (eds.) *Syntax and Semantics 14: Tense and Aspect*. New York: Academic Press. 79-90.

Dahl, Ö. 1985. *Tense and Aspect Systems*. New York: Blackwell Publishers.

de Swart, H. E. 1999. Position and Meaning: Time Adverbials in Context. In P. Bosch & R. van der Sandt (eds.) *Focus: Linguistic, Cognitive, and Computational Perspectives*. Cambridge: Cambridge Univ. Press. 336-361.

Demirdache, H. & M. Uribe-Etxebarria. 2000. The Primitives of Temporal Relations. In

R. Martin, D. Michaels & J. Uriagereka (eds.) *Step by Step: Essays on Minimalist Syntax in Honor of Howard Lasnik.* Cambridge: the MIT Press. 157-186.

Demirdache, H. & M. Uribe-Etxebarria. 2001. La grammaire des prédicats spatio-temporels: temps, aspect et adverbes de temps. ms. (To appear in B. Laca (ed.) *Temps et aspect: Syntaxe et intérpretation.* Paris: Presses Univ. de Vincennes.)

Dik, S. 1989. *The theory of functional grammar: The structure of the clause.* Dordrecht: Foris Publications.

Dik, S.C., K. Hengeveld, E. Vester & C. Vet. 1990. The hierarchical structure of the clause and the typology of adverbial satellites. In J. Nuyts, Bolkestein & C. Vet (eds.) *Layers and Levels of Representation in Language Theory: A Functional View.* Amsterdam: John Benjamins Publishing Company. 25-70.

Dilaçar, A. 1974. Türk Fiilinde Kılınışla Görünüş ve Dilbilgisi Kitaplarımız. *Türk Dili Araştırmaları Yıllığı-Belleten.* 159-171.

Dillon, G. L. 1973. Perfect and other aspects in a case grammar of English. In *Journal of Linguistics 9*: 271-279.

Dowty, D. 1991. Thematic proto-roles and argument selection. *Language 67.3*:547-619.

Dowty, D. R. 2002. Towards a Semantic Analysis of Verb Aspect and the English "Imperfective" Progressive. In P. Portner & B. Partee (eds.) *Formal Semantics: The Essential Readings.* Oxford: Blackwell Publishing. 261-288. (reprint)

Dunlea, A. 1989. *Vision and the emergence of meaning: Blind and sighted children's early language.* Cambridge: Cambridge Univ. Press.

Enç, M. 1997. Tense and Modality. In S. Lappin (ed.) *The Handbook of Contemporary Semantic Theory.* New York: Blackwell Publishers. 345-358.

Ergin, M. 1993. *Türk Dil Bilgisi.* İstanbul: Bayrak Basın/Yayın/Tanıtım. (20th ed.)

Erguvanlı, E. 1984. *The Function of Word Order in Turkish.* Berkeley: Univ. of California Press.

Erguvanlı-Taylan, E. 1993. Türkçe'de *-DIK* Ekinin Yantümcelerdeki İşlevi Üzerine (On the function of *-DIK* in subordinate clauses in Turkish). *Dilbilim Araştırmaları.* Ankara: Hitit Yayınevi. 161-171.

Erguvanlı-Taylan, E. 1997. Türkçe'de görünüş, zaman ve kiplik ilişkisi: {-DI} biçimbirimi (The relation between tense, aspect and modality in Turkish: the -DI morpheme). In D. Zeyrek & Ş. Ruhi (eds.) *XI. Dilbilim Kurultayı:Bildiriler.* Ankara: Şafak Matbaası. 1-11.

Erguvanlı-Taylan, E. 2000. Semi-grammaticalized modality in Turkish. In A. Göksel & C. Kerslake (eds.) *Studies on Turkish and Turkic Languages.* Wiesbaden: Harrasowitz Verlag. 133-142.

Erguvanlı-Taylan, E. 2001. On the relation between temporal/aspectual adverbs and the verb form in Turkish. In E. Erguvanlı-Taylan (ed.) *The Verb in Turkish,* Amsterdam: John Benjamins Publishing Company. 97-128.

Erkman-Akerson, F. & Ş. Ozil. 1998. *Türkçede Niteleme: Sıfat İşlevli Yan Tümceler.* İstanbul: Simurg.

Ernst, T. 2002. *The Syntax of Adjuncts.* Cambridge:Cambridge Univ. Press.

Fillmore, C. J. 1997. *Lectures on Deixis.* Stanford: CSLI Publications.

Fleischman, S. 1995. Imperfective and Irrealis. In J. Bybee & S. Fleischman (eds.) *Modality in Grammar and Discourse.* Amsterdam: John Benjamins Publishing Company. 519-551.

Foley, W & R. Van Valin. 1984. *Functional Syntax and Universal Grammar.* Cambridge: Cambridge University Press.

Gencan, T.N. 1979. *Dilbilgisi*. Ankara: TDK Yayınları. (4th ed.)

Giorgi, A. & F. Pianesi. 1997. *Tense and Aspect: From semantics to morphosyntax.* Oxford: Oxford Univ. Press.

Goldsmith, J. & E. Woisetschlaeger. 1982. The Logic of the English Progressive. *Linguistic Inquiry 13.1*:79-89.

Goodstein, R. L. 1963. *Boolean Algebra.* Oxford: Pergamon Press.

Gordon, I.E: 1989. *Theories of Visual Perception.* Chichester: John Wiley& Sons.

Göksel, A. 2001. The auxiliary verb *ol* at the morphology-syntax interface. In E. Erguvanlı-Taylan (ed.) *The Verb in Turkish.* Amsterdam: John Benjamins Publishing Company. 151-181.

Grice, H P. 1975. Logic and Conversation. In P. Cole & J.L.Morgan (eds.) *Syntax and Semantics 3: Speech Acts.* New York:Academic Press, pp. 41-58.

Haegeman, L. 1989. *Be going to* and *will*: a pragmatic account. *Journal of Linguistics 25*: 291-317.

Hengeveld, K. 1989. Layers and Operators in Functional Grammar. *Journal of Linguistics 25*: 127-157.

Heny, F.W. 1973. Sentence and Predicate Modifiers in English. In J. P. Kimball (ed.) *Syntax and Semantics 3.* New York: Academic Press. 217-245.

Hitzeman, J. 1997. Semantic Partition and the Ambiguity of Sentences Containing Temporal Adverbials. *Natural Language Semantics 5*: 87-100.

Hoepelman, J. & C. Rohrer. 1981. Remarks on *noch* and *schon* in German. In P. Tedeschi & A. Zaenen (eds.) *Syntax and Semantics 14:Tense and Aspect.* New York: Academic Press. 103-126.

Hopper, P. 1979. Aspect and Foregrounding in Discourse. In T. Givón (ed.) *Syntax &*

Semantics V12: Discourse & Syntax. New York: Academic Press. 213-241.

Hopper, P. J. 1982. Aspect Between Discourse and Grammar: An Introductory Essay for the Volume. In P. J. Hopper (ed.). *Tense-Aspect: Between Semantics and Pragmatics*, Amsterdam: John Benjamins Publishing Company. 3-18.

Hopper, P. & S. A. Thompson. 1980. Transitivity in grammar and discourse. *Language 56*:251-299.

Hornstein. N. 1977. Towards a Theory of Tense. *Linguistic Inquiry 8.3*: 521-557.

Iatridou, S. 2000. The Grammatical Ingredients of Counterfactuality. *Linguistic Inquiry 31*: 231-270.

Iatridou, S. 2002. More Perfect Constructions. ms.

Iatridou, S., E. Anagnostopoulou, & R. Izvorski. 2000. Some observations about the form and meaning of the perfect. ms.

Jackendoff, R. 1972. *Semantic Interpretation in Generative Grammar*. Cambridge: The MIT Press.

Johanson, L. 1971. *Aspect im Türkischen*. Uppsala.

Johanson, L. 1994. Türkeitürkische Aspektotempora. In R. Thieroff & J. Ballweg (eds.) *Tense Systems in European Languages*. Tübingen:Max Niemeyer Verlag. 247-265.

Kerslake, C. 1996. The Semantics of Possibility in Turkish. In B.Rona (ed.) *Current Issues in Turkish Linguistics* (Proceedings of the 5th International Conference on Turkish Linguistics, SOAS, Aug 15-17, 1990). 84-103.

Kerslake, C. 1997. Future Time Reference in Subordinate Clauses in Turkish. In K. İmer & N. E. Uzun (eds.) *Proceedings of the 8th International Conference on Turkish Linguistics*, August 7-9, 1996, Ankara. 49-59.

Kiefer, F. 1995. Lexical information and the temporal interpretation of discourse. In M. Shibatani & S. Thompson (eds.) *Essays in Semantics and Pragmatics*. Amsterdam: John Benjamins. 111-132.

Klein, W. 1992. The Present Perfect Puzzle. *Language 68*: 525-552.

Klein, W. 1995. A Time-Relational Analysis of Russian Aspect. *Language 71*: 669-695.

Klein, W. 2000. An Analysis of the German Perfekt. *Language 76.2:* 358-382.

Klein, W., Y. Li & J. Hendricks. 2000. Aspect and Assertion in Mandarin Chinese. *Natural Language and Linguistic Theory 18*, 723-770.

Kornfilt, J. 1997. *Turkish*. London: Routledge.

Krifka, M. 1989. Nominal Reference, Temporal Constitution and Quantification in Event Semantics. In R. Bartsch, J. van Emde Boas (eds.) *Semantics and Contextual Expression*. Dordrecht: Foris Publications. 75-115.

Landman, F. 1992. The Progressive. *Natural Language Semantics 1*:1-32.

Langacker, R. W. 1991. *Concept, Image, and Symbol: The Cognitive Basis of Grammar*. Berlin: Mouton de Gruyter.

Larson, R. & G. Segal. 1995. *Knowledge of Meaning*. Cambridge: The MIT Press.

Larson, R. K. 1985. Bare-NP Adverbs. *Linguistic Inquiry 16.4*: 595-621.

Lee, D. 2001. *Cognitive Linguistics: An Introduction*. Oxford: Oxford Univ. Press.

Lenci, A. & P.M. Bertinetto. 2000. Aspect, Adverbs, and Events: Habituality vs. Perfectivity. In J. Higginbotham, F. Pianesi & A.C. Varzi (eds.) *Speaking of Events*. Oxford: Oxford Univ. Press. 245-287.

Lewis, D. 2002. Adverbs of Quantification. In P. Portner & B. Partee (eds.) *Formal Semantics: The Essential Readings*. Oxford: Blackwell Publishing.178-188. (reprint)

Lewis, G. L. 1967. *Turkish Grammar*. Oxford: Clarendon Press.

Link, G. 2002. The Logical Analysis of Plurals and Mass Terms: A Lattice-theoretical Approach. In P. Portner & B. Partee (eds.) *Formal Semantics: The Essential Readings*. Oxford: Blackwell Publishing.127-146. (reprint)

Löbner, S. 1999. Why German *schon* and *noch* are still duals: A Reply to Van der Auwera. *Linguistics and Philosophy 22*: 45-107.

McCawley, J.D. 1988. Adverbial NPs: Bare or Clad in See-Through Garb? *Language 64.3*: 583-590.

McConnell-Ginet, S. 1982. Adverbs and Logical Form: A Linguistically Realistic Theory. *Language 58.1:* 144-184.

Michaelis, L.A. 1994. The ambiguity of the English present perfect. *Journal of Linguistics 30*: 111-157.

Michaelis, L.A. 1996. Cross-World Continuity and the Polysemy of Adverbial *still*. In G. Fauconnier & E. Sweetser (eds.) *Spaces, Worlds and Grammar*. Chicago: Univ. of Chicago Press. 179-226.

Mitchell, G. 1976. Indicating the Truth of Propositions: A Pragmatic Function of Sentence Adverbs. In S. S. Mufwere, C. A. Waller & S. B. Steever (eds.) *CLS 12*: 495-505.

Mittwoch, A. 1982. On the Difference between *Eating* and *Eating Something*: Activities versus Accomplishments. *Linguistic Inquiry 13*: 113-122.

Morrissey, M. D. 1973. The English perfective and 'still'/'anymore.' *Journal of Linguistics 9*, 65-69.

Mourelatos, A. P. D. 1981. Events, Processes, and States. In P. Tedeschi & A. Zaenen

(eds.). *Syntax and Semantics 14: Tense and Aspect*. New York: Academic Press. 191-212.

Musan, R. 2001a. Seit-Adverbials in Perfect Constructions. ms. (at the website of Humboldt-Universitaet zu Berlin)

Musan, R. 2001b. The Present Perfect in German: Outline of its Semantic Composition. *Natural Language and Linguistic Theory 19*: 355-401.

Nicolle, S. 1997. A relevance-theoretic account of *be going to*. *Journal of Linguistics 33*: 355-377.

Nilsson, B. 1985. *Case Marking Semantics in Turkish*, Ph.D. Dissertation, Univ. of Stockholm.

Nilsson, B. 1984. Object Incorporation in Turkish, *Türk Dilbilim Konferansı Bildirileri 1984 Papers from the Turkish Linguistics Conference 1984*, Boğaziçi Üniversitesi Yayınları, 113-128.

Ozil, Ş. 1994. Temel Tümcelerde ve Ortaçlı Yapılarda Kip Anlatımı. *Dilbilim Araştırmaları*. Ankara: Hitit Yayınevi. 112-127.

Palmer, F. R. 1986. *Mood and Modality*. Cambridge: Cambridge Univ. Press.

Portner, P. 1998. The Progressive in Modal Semantics. *Language 74*: 760-787.

Portner, P. 2003. The (Temporal) Semantics and (Modal) Pragmatics of the Perfect. *Linguistics and Philosophy 26 (4)*: 459-510.

Ramchand, G. C. 1997. *Aspect and Predication: The Semantics of Argument Structure*. Oxford: Clarendon Press.

Rapoport, T. R. 1999. Structure, Aspect, and the Predicate. *Language 75*: 653-677.

Reichenbach, H. 1947. *Elements of Symbolic Logic*. New York: The Free Press.

Rothstein, S. 2004. *Structuring Events*. Oxford:Blackwell Publishing.

Ruhi, Ş., D. Zeyrek & N. Osam 1997. Türkçede Kiplik Belirteçleri ve Çekim Ekleri İlişkisi Üzerine Bazı Gözlemler. *Dilbilim Araştırmaları 1997*: 105-111.

Salaberry, M. R. 2000. *The Development of Past Tense Morphology in L2 Spanish.* Amsterdam: John Benjamins Publishing Company.

Salkie, R. 1989. Perfect and Pluperfect: what is the relationship? *Journal of Linguistics 25*: 1-34.

Sanders, G. A. 1978. Adverbial Constructions. In J.H. Greenberg (ed.) *Universals of Human Language*. California: Stanford Univ. Press. 51-84.

Sansa-Tura, S. 1986. *DIR* in Modern Turkish. In A.A. Aksu-Koç & E.E. Taylan (eds.) *Proceedings of the Turkish Linguistics Conference (August 9-10, 1984)*. Istanbul: Boğaziçi Univ. Publications. 145-158.

Savaşır, İ. 1986. Habits and Abilities in Turkish. In D. Slobin & K. Zimmer (eds.) *Studies in Turkish Linguistics*. Amsterdam: John Benjamins. 137-146.

Schmidt, C. 2001. Cross-linguistic Variation and the Present Perfect: The Case of Portuguese. *Natural Language and Linguistic Theory 19*: 403-453.

Schroeder, C. 2000. Almanca'da ve Türkçe'de ikincil yüklemler. In A.S. Özsoy & E.E. Taylan (eds.) *XIII. Dilbilim Kurultay Bildirileri*. Istanbul: Boğaziçi Univ. Press. 79-92.

Sebüktekin, H. I. 1971. *Turkish-English Contrastive Analysis: Turkish Morphology & Corresponding English Structures*. The Hague: Mouton.

Sezer, E. 2001. Finite inflection in Turkish. In E. Erguvanlı-Taylan (ed.) *The Verb in Turkish*. Amsterdam: John Benjamins Publishing Company. 1-45.

Shirai, Y. & R. W. Andersen. 1995. The Acquisition of Tense-Aspect Morphology : A Prototype Account. *Language 71*: 743-761.

Siewierska, A. 1991. *Functional Grammar*. London: Routledge.

Singh, M. 1998. On the Semantics of the Perfective Aspect. *Natural Language Semantics 6*: 171-199.

Slobin, D. I. & A.A. Aksu. 1982. Tense, Aspect, and Modality in the Use of the Turkish Evidential. In P. J. Hopper (ed.) *Tense-Aspect: Between Semantics and Pragmatics*. Amsterdam: John Benjamins Publishing Company. 185-200.

Smith, C. 1981. Semantic and Syntactic Constraints on Temporal Interpretation. In P. Tedeschi & A. Zaenen (eds.) *Syntax and Semantics 14: Tense and Aspect*. New York: Academic Press. 213-237.

Smith, C. 1983. A Theory of Aspectual Choice. *Language 59*: 479-501.

Smith, C. 1986. A speaker-based view of aspect. *Linguistics and Philosophy 9:* 97-115.

Smith, C. 1997. *The Parameter of Aspect*. Dordrecht: Kluwer Academic Publishers.

Smith, C. 1999. Activities: States or Events? *Linguistics and Philosophy 22:* 479-508.

Solso, R. L. 1994. *Cognition and the Visual Arts*. Cambridge: The MIT Press.

Stroik, T. 1990. Adverbs as V-sisters. *Linguistic Inquiry 21:* 654-661.

Swift, B. L.1963. *A Reference Grammar of Modern Turkish*. Bloomington: Indiana Univ. Publications.

Talmy, L. 2000a. *Toward a Cognitive Semantics: Concept Structuring Systems* (v1). Cambridge: The MIT Press.

Talmy, L. 2000b. *Typology and Process in Concept Structuring* (v2). Cambridge: The MIT Press.

Taylor, J. R. 2002. *Cognitive Grammar*. Oxford: Oxford Univ. Press.

Tenny, C. 1994. *Aspectual Roles and the Syntax-Semantics Interface*. Dordrecht: Kluwer Academic Publishers.

Tenny, C. 2000. Aspectual Roles, Modularity, and Acquisition; with a Discussion of Contact Locatives. In P. Coopmans, M. Everaert & J. Grimshaw (eds.) *Lexical Specification and Insertion*. Amsterdam: John Benjamins Publishing Company. 379-401.

Thomason, R. & R. Stalnaker. 1973. A semantic theory of adverbs. *Linguistic Inquiry 4*:195-220.

Thompson, S. & R. Longacre. 1985. Adverbial Clauses. In T. Shopen (ed.) *Language Typology and Syntactic Description*. Cambridge: Cambridge Univ. Press. 171-234.

Traugott, E. C. & J. Waterhouse. 1969. 'Already' and 'yet': a suppletive set of aspect-markers? *Journal of Linguistics 5*: 287-304.

Traugott, E. C. 1978. On the Expression of Spatio-Temporal Relations in Language. In J.H. Greenberg (ed.) *Universals of Human Language*. California: Stanford Univ. Press. 369-400.

Tremblay, M. & H. Yükseker. 2000. Piti piti karamela sepeti or how to choose your own adverb in Turkish. In A. Göksel & C. Kerslake (eds.) *Studies on Turkish and Turkic Languages*. Wiesbaden: Harrasowitz Verlag.

Underhill, R. 1976. *Turkish Grammar*. Cambridge: The MIT Press.

van Schaaik, G. 2001. Periphrastic tense/aspect/mood. In E. Erguvanlı-Taylan (ed.) *The Verb in Turkish*. Amsterdam: John Benjamins Publishing Company. 61-95

Vanden Wyngaerd, G. 2001. Measuring Events. *Language 77.1:* 61-90.

Verkuyl, H. J. 1996. *A Theory of Aspectuality: The Interaction between Temporal and Atemporal Structure*. Cambridge: Cambridge Univ. Press.

Vlach, F. 1981. The Semantics of the Progressive. in P. Tedeschi & Zaenen, A. (eds)

Syntax and Semantics 14: Tense and Aspect. New York: Academic Press. 271-292.

Wallace, S. 1982. Figure and Ground: The Interrelationships of Linguistic Categories. In P. J. Hopper (ed.) *Tense-Aspect: Between Semantics and Pragmatics.* Amsterdam: John Benjamins Publishing Company. 201-223.

Weintraub, D. J & E.L. Walker. 1966. *Perception.* Belmont, California: Brooks/Cole Publishing Company.

Yavaş, F. 1980. *On the Meaning of Tense and Aspect Markers in Turkish.* Unpublished Ph.D. Dissertation, Univ. of Kansas.

Yavaş, F. 1982. The Turkish Aorist. Glossa 16 (1): 40-51.

Youssef, V. 1990. The early development of perfect aspect: adverbial, verbal and contextual specification. *Journal of Child Language 17*: 295-312.