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A SEMANTIC FRAMEWORK FOR ANALYZING TENSE, ASPECT AND MOOD:

An Application to the Ranges of Polysemy of *-Xr*, *-DIr*, *-Iyor* and *-Ø* in Turkish

(EEN SEMANTISCH RAAMWERK VOOR DE ANALYSE VAN MARKEERDERS VAN TIJD, ASPECT EN MODUS:

Een Toepassing op de Polysemie van *-Xr*, *-DIr*, *-Iyor* en *-Ø* in het Turks)

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Abstract (English)

This dissertation develops a semantic framework for analyzing tense, aspect and mood (TAM) markers on the basis of a language-independent semantic space and applies this framework to the ranges of polysemy associated with *-Xr*, *-DIr*, *-Iyor* and zero-marking (*-Ø*) in Turkish.

The semantic framework introduces *anchoring relations* as semantic building blocks of TAM reference, which serve to 'anchor' (or situate) an abstract predicational content in the *temporal*, the *epistemic*, and the *volitional* frames defined in the immediate discursive context. It formulates anchoring relations in terms of higher-order entities (temporal locations, thoughts, and projections) qualified relative to cognitive states that serve as reference points in the three domains. It defines *basic anchoring categories* in each of the three domains of anchoring and illustrates them with grammatical strategies across languages. It then develops a quasi-formal metalanguage which enables one to decompose the convention-bound meaning of an utterance into a volitional category, an epistemic category, a temporal category and an abstract predicational content (SoA), taking scope over each other in this respective order. Although the framework is primarily about sentence meaning, it centrally deals with phenomena traditionally relegated to pragmatics, including deixis, anaphoric reference and conventional implication. It also accounts for how the speaker's linguistic intentions relate to the illocutionary act she performs.

The analytic part of the dissertation identifies the main conventional uses of the Turkish TAM markers *-Xr*, *-DIr*, *-Iyor* and *-Ø* in finite sentences, using a 'family resemblance' approach to polysemy. It analyzes each of the identified uses into their semantic building blocks and renders them into the metalanguage of anchoring categories. It seeks the motivations for the present-day ranges of polysemy of these markers in the diachronic stages of their semantic evolution.

Abstract (Nederlands)

In deze dissertatie wordt een semantisch raamwerk ontwikkeld voor de analyse van markeerders van tijd, aspect en modus (TAM) op basis van een taalonafhankelijke semantische ruimte. Dit raamwerk wordt toegepast op het polysemie van de Turkse *-Xr*, *-DIr*, *-Iyor* markeerders als ook van de nulmarkeerder (*-Ø*).

Het semantische raamwerk voert ankerrelaties (*anchoring relations*) in als semantische bouwstenen voor TAM-referentie, die een abstracte predicationele inhoud 'verankeren' (of situeren) in de *temporele*, *epistemische* en *volitionele* kaders, die door de onmiddellijke discursieve context bepaald worden. De relaties worden beschreven in termen van entiteiten van een hogere orde (temporele locaties, gedachten en projecties), die gekarakteriseerd worden in relatie tot cognitieve toestanden die als referentiepunten functioneren in de drie domeinen. In elk domein worden basisankercategorieën (*basic anchoring categories*) gedefinieerd, die geïllustreerd worden met grammaticale strategieën van diverse talen. Vervolgens wordt een quasi-formele metataal ontwikkeld die het mogelijk maakt de conventionele betekenis van een uiting uit te splitsen in een volitionele categorie, een epistemische categorie, een temporele categorie en een abstracte predicationele inhoud (stand van zaken), die elkaar in de respectieve volgorde binnen hun bereik hebben. Hoewel het raamwerk hoofdzakelijk betrekking heeft op zinsbetekenis, behandelt het fundamenteel fenomenen die traditioneel worden overgelaten aan pragmatiek, zoals deixis, anaforische referentie en conventionele implicatie. Het verklaart ook de wijze waarop de linguïstische intenties van de spreker in verband staan met de taalhandeling die hij of zij uitvoert.

In het analytische deel van de dissertatie worden de belangrijkste conventionele gebruiken van de Turkse TAM-markeerders *-Xr*, *-DIr*, *-Iyor* en *–Ø* in finiete zinnen onderscheiden, door middel van een op het concept van 'familiegelijkenis' gebaseerde benadering van polysemie. Elk geïdentificeerd gebruik wordt ontleed in zijn semantische bouwstenen en wordt omgezet in de metataal van *anchoring categories*. De verklaring van de hedendaagse polysemie van de markeerders wordt gezocht in de diachrone stadia van hun semantische ontwikkeling.

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Conventions

Transcription

The Turkish examples are given in the national orthography of the Republic of Turkey. The following list shows the phonetic realizations of the orthographic symbols in the IPA (International Phonetic Alphabet) standard:

a	:	/a/	ı	:	/ɯ/	r	:	/ɾ/
b	:	/b/	i		/i/	s	:	/s/
c	:	/ʤ/	j	:	/ʒ/	ş	:	/ʃ/
ç	:	/tʃ/	k	:	/k/	t	:	/t/
d	:	/d/	l	:	/l/ or /ɬ/	u	:	/u/
e	:	/e/	m	:	/m/	ü	:	/y/
f	:	/f/	n	:	/n/	v	:	/v/
g	:	/g/	o	:	/o/	y	:	/j/
ğ	:	/ɣ/	ö	:	/œ/	z	:	/z/
h	:	/h/	p	:	/p/			

Turkish markers are referred to in the text using abstract representations underspecified as to phonetic alternations conditioned by morpho-phonological rules such as vowel harmony and consonant assimilation. The letters used for abstract phonemes and their phonetic realizations (in the Turkish orthography) are listed below:

A	:	a, e
I	:	ı, i, u, ü
U	:	u, ü
X	:	a, e, ı, i, u, or ü
D	:	d, t
G	:	ğ, k
B	:	b, p

In the abstract morpheme representations, parentheses are used to indicate buffer phonemes. A hyphen (-) is used to mark a bound morpheme. Where a marker is in the focus of a discussion, it is emphasized with a bold letter type and its abstract phonological representation is used in the glosses.

Glosses

The glosses listed below have been chosen to reflect the semantic functions of Turkish morphemes that are commonly identified in the literature. As such, they do not necessarily reflect the general meanings nor the focal uses of the morphemes they stand for. Therefore, they may not match the actual uses of the morphemes which appear in the examples throughout the dissertation.

In the Turkish examples, agreement with the 3rd person singular (which is actually formally unmarked) is not shown in the glosses. Glosses of Turkish examples taken from other sources are realigned according to the list below. Glosses of examples from other languages appear in the same way as in the original documents, unless specified otherwise.

A1PL	first person plural agreement
A1SG	first person singular agreement
A2PL	second person plural agreement
A2SG	second person singular agreement
A3PL	third person plural agreement
ABIL	abilitative
ABL	ablative
ACC	accusative
AN	action nominalizer
ASC	associative
CAUS	causative
COM	comitative/instrumental
COND	conditional
CONDe	conditional enclitic
CONJ	conjunction
CONT	continuous
DAT	dative
DTA	durative temporal adverbial
EPAST	evidential past
EPASTe	evidential past enclitic
EXCP	existential copula
FN	factive nominalizer
FUT	future
GEN	genitive
HABG	habitual-generic
IMP	imperative
INF	infinitive
JDGe	judgment enclitic
LOC	locative
NEC	necessity
NEG	negative
NEGP	negative particle
NOM	nominative
OPT	optative
P1PL	first person plural pronoun
P1SG	first person singular pronoun
P2PL	second person plural pronoun
P2SG	second person singular pronoun
P3PL	third person plural pronoun
P3SG	third person singular pronoun
PASS	passive
PAST	past
PASTe	past enclitic
PLU	plural
POS	possibility
POSS	possessive
PRIV	privative
PROG	progressive
QP	question particle
RDUP	reduplication
REL	relative pronoun
SREL	subject relativizer

List of symbols and abbreviations

In the text and in examples:

*	:	indicates ungrammaticality (morphosyntactic ill-formedness)
#	:	indicates non-acceptability of a marker (or a combination of markers) in the intended use
?	:	indicates low degree of acceptability of a marker (or a combination of markers) in the intended use
>	:	indicates ranking in a hiararchy
-	:	indicates a boundary of morphemic combination

In the metalanguage of anchoring categories:

¬	:	indicates negation
[ ]	:	enclose the argument(s) of a predicate
( )	:	indicate containment (scope taking)
/ /	:	enclose specifications for basic anchoring categories
< >	:	enclose a displaced frame
{ }	:	indicate the value returned by a value-retrieving function
ANA	:	indicates an anaphoric reference
ANA.OCC	:	indicates an anaphoric reference to an occurrence
DISP-T	:	indicates an expression which triggers a temporal displacement
DISP-E	:	indicates an expression which triggers an epistemic displacement
DISP-V	:	indicates an expression which triggers a volitional displacement

Typesetting

In the text:

SMALL CAPS	:	Labels for basic anchoring categories.
italics	:	Terms defined or introduced for the first time, linguistic markers and expressions, variables for semantic contents, emphasis.
Initial caps		Descriptive labels for grammatical paradigms.
'single quotes'	:	Terms by quoted authors, terms used in other frameworks, English translations within the text.

In the examples:

SMALL CAPS	:	Gloss items for Turkish examples
bold	:	Markers currently discussed (and their glosses).
italics	:	Translations of non-English examples.

In non-Turkish examples quoted from other sources, bold and italic typesetting shown above is applied in addition to the original notations.

Contents

Chapter 1

Introduction

1.1 The aim and the scope of the study

This dissertation aims to identify and analyze the ranges of polysemy of the Turkish TAM (tense, aspect, and mood) markers *-Xr, -Iyor*, *-DIr* and zero-marking (*-Ø*) in terms of purely semantic categories defined in a language-independent way.

The work is organized in two parts. Part I develops a semantic framework which incorporates a structured semantic space of TAM-related dimensions. Part II applies this semantic framework to the analysis of the current ranges of polysemy and the diachronic developments of the Turkish TAM markers *-Xr*, *-DIr*, *-Iyor* and *-Ø*.

The present Chapter, the Introduction, expands on the need for a purely semantic metalanguage for cross-linguistically comparable analyses in the field of TAM. It then outlines the main sources of inspiration for the semantic framework to be developed, delimits the levels of analysis, and defines the preliminary concepts. In Part I, Chapter 2 introduces the idea of *anchoring relations,* which stand for the components of sentence meaning which 'anchor' or 'situate' an abstract predicational content within *temporal*, *epistemic* and *volitional frames* defined in the discursive context. Chapter 3 introduces higher-order entities in the temporal, epistemic and volitional domains and motivates isomorphic perspectival configurations in each domain. Chapter 4 defines the basic anchoring categories and expands on the formal and communicative correlates of their expression. Chapter 5 provides usage-based characterizations of the basic anchoring categories and illustrates their grammatical expression with cross-linguistic data. Chapter 6 develops a metalanguage of anchoring categories which can render the conventional meaning of a sentence in the form of a hierarchical semantic structure. In Part II, Chapter 7 reviews the general properties of Turkish with an emphasis on the formal structure of its TAM system. Chapter 8, which constitutes the core of Part II, identifies the main conventional uses of *-Xr*, *-DIr*, *-Iyor* and *-Ø* and analyzes each use into its semantic building blocks using the semantic metalanguage defined in Part I. It then spots the anchoring categories which are characteristically signaled by each marker and represents them in the form of semantic maps. Lastly, it compares the given analysis with previous treatments in the semantics of *-Xr*, *-DIr*, *-Iyor* and *-Ø*. Chapter 9 proposes hypotheses as to how *-Xr*, *-DIr*, *-Iyor* and *-Ø* may have attained their present-day ranges of polysemy. The last chapter, the Conclusion, summarizes the merits of the semantic framework developed in Part I, mentions how the Turkish analysis in Part II differs from previous treatments which rely on traditional tense, aspect and mood categories, and suggests some future prospects.

1.2 The need for a purely semantic metalanguage

The semantic analysis of Turkish TAM markers presented in this study does not use the traditional categories 'tense', 'aspect', 'mood', 'modality' and their subcategories.[1] One reason for avoiding them is that they cannot effectively handle polysemy and cumulative expression, both of which are pervasive in the expression of TAM-related dimensions.[2] The second reason is that 'tense', 'aspect' and 'mood' are not purely semantic categories; they denote grammatical paradigms by definition.[3] Therefore, semantic analyses based on these categories are influenced by the grammatical particularities of the investigated language. They also fail to efficiently handle temporal or modal distinctions which are not coded grammatically (e.g., those expressed by adverbial elements, mental state verbs, or zero-marking). As a result, they often yield analyses which are not cross-linguistically comparable.

A comprehensive and cross-linguistically comparable analysis of a TAM marker necessitates a purely semantic metalanguage, which integrates various dimensions of time, knowledge, volition and illocutionary force in a coherent and principled way. In spite of recent advancements in TAM, especially in linguistic typology, the field still lacks a complete semantic theory which provides a universal semantic metalanguage. The semantic framework developed in the present dissertation is intended as a prolegomena to such a semantic theory of TAM. It motivates a language-independent semantic space with reference to universally applicable cognitive and communicative notions, explicitly defines semantic categories on this semantic space, and develops a purely semantic metalanguage. This metalanguage is then used in the analysis of the polysemies of the Turkish markers *-Xr*, *-DIr, -Iyor*, and *-Ø*. As such, the analysis implements a radical *meaning-to-form* (or, function-to-form) orientation.[4] Since the semantic categories are explicitly defined beforehand, the analysis also avoids the notorious terminological confusion in the field of TAM.[5]

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[1] Throughout the dissertation, the abbreviation 'TAM' is used in a pre-theoretical sense, to denote any type of formal strategy which refers to some aspect of time, knowledge, volition, or illocution.

[2] Analyses based on the traditional categories 'aspect', 'tense', or 'mood' tend to coerce a given marker into one of these three paradigms. But strategies identified as 'aspect' or 'tense' often also have a number of 'modal' and 'discursive' uses (e.g., 'past' markers expressing 'counterfactuality', 'perfective' markers 'sequentiality', 'future' markers 'epistemic modality', 'resultative' markers 'evidentiality, etc.). A certain use of a single marker may also incorporate both 'temporal' and 'modal' dimensions (e.g., the 'predictive' uses of some future markers).

[3] 'Tense' and 'aspect' refer to *grammatical* paradigms which indicate, respectively, the temporal distance of an event from a reference time, and the internal perspective from which an event is viewed (e.g., Comrie 1976: 1-3, Bhat 1999: 43-44). Similarly, a 'mood' involves a grammatical (and generally, morphological) marker which expresses the speaker's subjective attitude towards a propositional content (e.g., Palmer 1986: 21, Hengeveld 2004: 1190).

[4] Croft (2003: 13-14) echoes Greenberg's (1966: 74) contention that "one is basically employing semantic criteria" in identifying comparable grammatical phenomena across languages, and recommends the meaning-to-form orientation as a standard research strategy for ensuring cross-linguistic comparability in typological research. Examples of the meaning-to-form orientation in linguistic analysis include Keenan & Comrie's (1977) study of relative clauses, Li & Thompson's (1976) cross-linguistic survey on 'subject' and 'topic',

1.3 The main sources of inspiration

The semantic framework developed in the first part of this work benefits from insights, ideas and results from various theoretical frameworks and empirical studies in the field of TAM. It is mainly established on the groundwork of linguistic typology: It benefits from various cross-linguistic studies in TAM (e.g., Comrie 1976, 1985; Bybee 1985; Bybee & Dahl 1989; Bybee, Perkins & Pagliuca 1994, Dahl 1985, Bhat 1999; Chafe & Nichols 1986; Palmer 1986, 2001; Johanson 2000a; Johanson & Utas 2000; Aikhenvald & Dixon 2003) as well as descriptive grammars of various individual languages. The semantic analysis of Turkish markers in Part II imports insights from semantic maps, which have been fruitfully used in typological studies on grammatical TAM markers (e.g., Anderson 1982 for 'perfect', van der Auwera & Plungian 1998 for 'modality'). Although the bulk of the analysis deals with synchronic phenomena, a diachronic perspective is adopted in explaining the ranges of polysemy associated with *-Xr*, *-DIr*, *-Iyor* and *-Ø*. These sections critically refer to the process of grammaticalization (e.g., Traugott & König 1991, Heine, Claudi & Hünnemeyer 1991, Hopper & Traugott 1993, Bybee, Perkins & Pagliuca 1994 and Lehmann 1995, among others).

This study follows the cognitive linguistics tradition, which investigates linguistic meaning in connection with speakers' subjective perspectives. Accordingly, it adopts a speaker-oriented approach to semantics rather than a simple correspondence theory of meaning that only rests on objectively defined referents and truth conditions. The theoretical apparatus in Part I imports insights and mechanisms from various frameworks within cognitive linguistics: The idea of anchoring, which accounts for the relational nature of TAM markers, essentially builds on the account of 'grounding' in Cognitive Grammar (Langacker 1987, 1991, 1997, 2002a,b; Brisard 2002a,b). The three semantic domains motivated in the semantic space of TAM (namely, the temporal, epistemic and volitional domains) are originally inspired by Sweetser's (1990) three-way distinction among 'content', 'epistemic', and 'speech-act' domains. The mental space theory (e.g., Fauconnier 1985, Fauconnier & Sweetser 1996, Fauconnier & Turner 1994, 1998) provides another

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Xrakovsky's (2001) edited collection on imperative constructions, and Nuyts' (2001a) treatment of alternative strategies for expressing epistemic modality in Dutch, German and English.

[5] Although the terms 'tense', 'aspect', 'mood' and 'modality' have long been used in linguistic analyses, scholars often disagree on the exact meaning of these terms and also on their subcategories. For instance, there are still controversies in distinguishing types or paradigms of 'aspect' (see, e.g., Bache 1995, Dahl 1999, Comrie 2002, Sasse 2002 and Tatevosov 2002, for summaries of different classifications of aspectual distinctions). There are many definitional discrepencies, such as what 'habitual' aspect actually covers, whether 'perfect' is as a subcategory of tense or aspect, whether 'future' is a tense or mood, or what differentiates the 'indicative' mood form the 'declarative'. Different frameworks distinguish and label different types and subcategories of 'modality' (e.g., Rescher 1968, Lyons 1977, Perkins 1983, Coates 1983, 1995, van der Auwera & Plungian 1998, Bybee & Fleischman 1995, Palmer 1986, 2001). Nuyts (2005), who points to the terminological confusion around the notion 'modality', even questions the use of the term for denoting any coherent semantic paradigm. Scholars diverge not only in how they define the mood categories 'realis' and 'irrealis' (e.g., Givón 1982, 1994, Chafe 1995, Mithun 1995, Bowern 1998, Palmer 2001, Verstraete 2005) but also in whether these labels are useful or not (e.g., Bybee, Perkins & Pagliuca: 1994: 326-240, Bybee 1998, van der Auwera & Schalley 2004).

main pillar of the proposed semantic framework: The account of center displacements and the related phenomenon of anaphoric TAM reference centrally recruit the mechanism of mental space construction.

The present framework motivates a hierarchical structure for sentence meaning, which is similar in sprit to the semantically motivated layered structures proposed in Functional Grammar (e.g., Dik 1989/1997, Hengeveld 1987, 1990). It shows most affinity with to Anstey's (2002) proposal, which differs from standard accounts of Functional Grammar in taking layering as a purely semantic phenomenon.

The semantic framework developed in Part I takes into account not only the cognitive, but also the communicative aspects of TAM reference. In delimiting its levels of semantic analysis and in accounting for how linguistic representations relate to linguistic actions, it rests on the basic tenets of the speech act theory (e.g., Austin 1962; Searle 1965, 1969, 1975a,b, 1979). It follows Grice (1957, 1968, 1975) in distinguishing between 'what is said' (what the speaker conventionally conveys) and 'what is meant' (what the speaker actually intends). It also critically refers to Grice's Principle of Cooperation and Sperber & Wilson's (1986) Principle of Relevance in accounting for the implication (on the side of the speaker) and inference (on the side of the addressee(s)) of speaker's intentions in making an utterance.

1.4 Levels of analysis and preliminary definitions

1.4.1 Illocutionary acts, utterances and sentences

This study delimits its levels of semantic analysis starting form the level of *illocutionary act*, which is characterized by Searle (1965/1991: 254, 1969: 16-17) as the 'minimal unit of linguistic communication'. The term *utterance* is used to denote a (spoken, written, or in some other way coded) signal produced in performing an illocutionary act. In other words, an utterance is the minimal linguistic expression associated with a certain illocutionary force.

The study basically uses the terms of the five-way classification of illocutionary acts proposed in Searle (1975a) in referring to different types of utterances:[6]

- *Assertive utterances* are those which are produced in 'assertive illocutionary acts', of which the point "is to commit the speaker (in varying degrees) to something's being the case, to the truth of the expressed proposition" (Searle 1975a: 12). They include utterances by means of which the speaker performs acts of telling, informing, reporting, admitting, claiming, suggesting, concluding, answering, etc.

[6] The present study does not maintain that this classificatory scheme is exact or exhaustive. Indeed, it has been criticized for lacking a principled and sound basis (e.g., Levinson 1983: 240-241). It is used here only for descriptive purposes.

- *Directive utterances* are products of 'directive illocutionary acts', which are "attempts […] by the speaker to get the hearer to do something" (Searle 1975a: 13). Directive utterances appeal the addressee(s) to take action in the direction of speaker's desire, preference, or consent, and they may or may not include an element of moral assessment. They include orders, requests, instructions, obligations, permissions, pleas, advises, etc.

- *Promises* are utterances produced in 'commissive illocutionary acts', "whose point is to commit the speaker […] to some future course of action" (Searle 1975a: 14).

- *Expressive utterances* are produced in 'expressive illocutionary acts', which "express the psychological state specified in the sincerity condition about a state of affairs specified in the propositional content" (Searle 1975a: 15). They are involved in the illocutionary acts of thanking, congratulating, welcoming, giving apologies, etc.

- *Declaratory utterances* are involved in 'declarations', of which the "successful performance brings about a correspondence between the propositional content and reality" (Searle 1975a: 16-17). The success of declarations often depends on the authority of the speaker granted by an extra-linguistic institution. They include utterances produced in order to, e.g., declare war, excommunicate someone, appoint someone chairman, etc.

Apart from these classes, I distinguish *expressions of wish*, which express a desire, wish, or hope of the speaker without specifically appealing the addressee(s) to take action. I use the term *statement* to refer to utterances which appear in non-personal communication (e.g., in official or institutional announcements, laws, and regulations). The term *sentence* is used throughout the dissertation to refer to a formal representation of an utterance.

1.4.2 Utterance meaning and semantic value

The current semantic framework attributes 'meaning' primarily to utterances. The overall meaning of an utterance in an actual communicative context is referred to as the *utterance meaning*. It covers ultimately context-sensitive implications which go beyond what is coded in conformity with linguistic conventions; it hence includes conversational (and other non-conventional) implicatures, perlocutionary intentions, and indirect illocutionary forces.[7] It closely matches Grice's (1957, 1968, 1975) notion of 'what is meant' (or, 'utterer's meaning') as opposed to 'what is said'.

[7] An *indirect* illocutionary force is one which does not directly follow from the conventional meaning (semantic value) of an utterance; it is implied on the basis of contextual assumptions. 'Indirection' is taken here in a more restricted sense than in Searle (1975b), who allows some degree of conventionalization in what he calls 'indirect speech acts'. For instance, the utterance in (i), intended to make an addressee open a window, will be taken here as yielding an indirect illocutionary force. But the interpretation of Searle's example in (ii) as a request is highly conventional. Hence, this utterance will not be taken here as having an indirect illocutionary force. (Still, one should acknowledge that the distinction between an implied meaning and a conventional use is not always clear-cut, since purely pragmatic implications can gradually evolve into conventional uses.)

That part of the utterance meaning which is conveyed by virtue of representational conventions is referred to as the *semantic value* of an utterance. The semantic value corresponds to what is generally referred to as 'sentence meaning' (or, 'what is said') but can additionally include conventional implications.[8] It is analyzable into the generalized meanings of the words and constructions that formally constitute the sentence.

The semantic value of an utterance is primarily understood relative to its speaker.[9] In other words, it involves 'subjectivity' (in the sense of Benveniste 1958, 1966 and Lyons 1982, and as manifested in the idea of 'construal' in the cognitive linguistics tradition). Still, 'meaning' is primarily taken as a property of utterances (and sentences) in the present study, rather than one of the minds of speakers (nor of hearers).[10] This early remark does not intend to deny the close connections between the semantic value of an utterance and the speakers' mental or cognitive structures. (On the contrary, such connections will be emphasized in defining anchoring relations in Chapter 2.) The point is that when one analyzes the meanings of utterances, one is not automatically analyzing the contents of speakers' minds or cognitive structures.

The semantic value guides the inferences that lead to the recovery of speaker's communicative intentions, provides input for cognitive processes of constructing and manipulating discourse structures (e.g., mental spaces), and includes information for regulating discourse connectedness and coherence. Although the semantic framework developed in Part I is primarily concerned with the components of the semantic value (and with how TAM markers are mapped onto these components), it also aims to account for how it relates to utterance meaning (what the speaker actually means within the immediate context of the utterance).

(i) Isn't it too hot here?

(ii) Can you pass the salt? (Searle 1975b/1991: 268)

[8] What is referred to as 'conventional implication' here is related to, but not identical with, Grice's (1975) notion of 'conventional implicature'. (Grice argues, for instance, that the conjunction 'but' does not explicitly convey, but only conventionally implies that there is a contrast between two propositions.) It more closely matches the notion of 'explicature' introduced by Sperber & Wilson (1986/1995) in their attempt to elaborate the Gricean notion of 'what is said'. Sperber & Wilson (1986/1995: 182) take an explicature as a proposition arrived at by the "development of a logical form encoded by the utterance". Carston (2003: 9) provides a more elaborate definition: "An 'explicature' is a propositional form communicated by an utterance which is pragmatically constructed on the basis of the propositional schema or template (logical form) that the utterance encodes; its content is an amalgam of linguistically decoded material and pragmatically inferred material".

Grammatical markers of 'perfect' are good examples of what is called a 'conventional implication' here: They constantly invite the addressee(s) to infer the consequences of a past event at the reference time. This implication is part of the conventional meaning of a perfect marker.

[9] The term *speaker* is used throughout the dissertation in an extended sense. It denotes the intentional producer of a linguistic expression, be it spoken, written, or coded in some other way. For convenience, the pronoun *she* will be used to refer to the speaker in general.

[10] This is why semantic categories defined in Part I are not labeled 'cognitive' or 'mental'.

The semantic value is taken in this study as the raw data for semantic analyses. Before one can start to make any semantic decomposition, generalization, or other kind of semantic analysis on a given utterance, one first needs to have understood its convention-bound meaning as accurately as necessary for one's immediate analytic goals. Any error in understanding and representing the semantic value of an utterance should count as a descriptive flaw, not an analytic one.

1.4.3 The communicative background

The semantic value of an utterance can be successfully communicated only if the speaker and the addressee(s) share certain contextual assumptions. These assumptions, construed from the perspective of the speaker, constitute the *communicative background* of an utterance.

The communicative background consists of the totality of the speaker's assumptions which are related to her immediate illocutionary act and which she also assumes to be shared (or can readily be taken for granted, or immediately inferable) by her addressee(s).[11] Such assumptions constitute the *presuppositions* of an utterance. They may include various kinds of information, including items of general knowledge (or, 'world knowledge'), culturally-shared knowledge, assumptions about the institutional or social position of the interlocutors, elements of the immediate communicative context, and the current state of the discourse.

1.4.4 The context-sensitivity of the semantic value

The semantic value of an utterance is closely tied to the communicative background. It typically incorporates deixis (i.e., it specifies links to the reference points in the communicative situation) and indexation (i.e., it refers to entities and relations available in the communicative context), and includes instructions for discourse organization. Conventional uses of certain TAM markers cannot even be defined without recourse to contextual elements. For instance, 'inferential' markers conventionally imply that a piece of evidence for the expressed proposition exists in the immediate context. Or, certain imperative or interrogative strategies index the social status of the interlocutors. Such contextual references[12] in the semantic value makes it necessary that many phenomena traditionally relegated to pragmatics (e.g., deixis, presupposition, speech acts, mental space building and manipulation, anaphoric reference, discourse organization, conventional

[11] The communicative background is comparable to 'common ground' in Stalnaker (1972) and to 'mutually manifest assumptions' in Sperber & Wilson (1986). The idea of 'ground' in Cognitive Grammar is similar but not identical to that of communicative background as defined here. While the 'ground' covers all aspects of the actual communicative situation, the communicative background only includes speaker's assumptions relevant to her immediate message. This does not mean that the communicative background does not contain assumptions about the ground. It critically includes assumptions about the participants, mutually (or collectively) tracked reference points in discourse, and frames (mental spaces) conceived around these reference points.

implication, etc.) be covered in a semantic analysis of sentences and sub-sentential units. Just as individual TAM markers are best ascribed meaning in terms of their contribution to the semantic value, the semantic value itself is best understood in its relations to the actual communicative context.[13]

1.4.5 Markers and uses

A *marker* is a unit of formal composition which has a distinctive meaning at the level of illocutionary act. It can be a bound morpheme or a particle, a lexical item or a grammatical element, a verbal root or an inflectional marker, a special syntactic configuration, a supra-segmental unit, a distinctive intonational contour, etc.

Particular markers in particular languages are associated with one or more distinctive semantic functions. Following Anderson (1982), these will be called here the *uses* of a marker. Anderson (1982) describes uses as "what speakers intend and hearers infer in particular contexts". For instance, one can distinguish at least two uses of the English auxiliary verb *will*: 'future' as in (1.1) and 'epistemic necessity' as in (1.2):

(1.1) The bus **will** take off at six.

(1.2) This **will** be the milkman. (e.g., upon someone ringing the doorbell)

Working with uses has some empirical benefits. Unlike abstract semantic features or primes, they can be identified at the level of illocutionary act and characterized in a maximally theory-neutral way. As pointed out by Bybee, Perkins & Pagliuca (1994), uses of a marker are accessible to non-linguists too:

> […] apparently both linguists and native speakers find the different uses of a morpheme to be fairly accessible. Opening almost any reference grammar, one finds the author enumerating the "uses" of particular morphemes (Bybee, Perkins & Pagliuca 1994: 44).

The semantic framework developed in this dissertation is primarily concerned with the uses of TAM markers which are *conventionally* associated with them. A conventional use of a marker is one which can be expressed by that marker without the involvement of ultimately context-

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[12] The term *reference* is used in this study in its most general sense. It is not restricted to designation by naming, but also includes (implicit or explicit) deixis, indexation of contextual elements, and anaphoric reference.

[13] Such a holistic approach was already advocated in Frege's (1884/1997: 90) 'context principle': which suggests that "[…] the meaning of a word must be asked for in the context of a proposition, not in isolation". Davidson (1984: 22) suggests extending Frege's context principle in favor of a 'holistic' treatment of sentence meaning: "Frege said that only in the context of a sentence does a word have meaning; in the same vein he might have added that only in the context of the language does a sentence (and therefore a word) have meaning".

dependent implications (indirect illocutions). A conventional use can be characterized in terms of the semantic categories it is composed of and (when necessary) its presuppositions (i.e., contextual and discursive assumptions required in its communicative background).

Conventional uses of a marker can be identified at different levels of granularity. For instance, one can take 'request' and 'order' as two different uses of an imperative marker, or subsume them under one general use (say, 'directive'). Or one can identify 'sequential occurrence in the past' and 'preterit' as two conventional uses of past morpheme, or include them in a more general label (say, 'past perfective'). In identifying the main uses of Turkish TAM markers in Part II, the level of granularity will be adjusted as closely as possible to match that of cross-linguistic gram types.[14]

1.4.6 Polyfunctionality

Markers and uses do not always match in a one-to-one manner. Markers (especially grammatical markers) are often associated with more than one (generally, in some way related) conventional use. This one-to-many mapping between markers and their uses is referred to here as *polyfunctionality*.[15]

Polyfunctionality can be described in terms of homonymy, monosemy, polysemy, and pragmatic implications. Homonymy entails that different meanings (or uses) of a form are unrelated; each form-meaning mapping is then identified as a separate linguistic item. Accidental homonymy is hardly relevant in the field of TAM, since recent developments in TAM (especially semantic maps and research on grammaticalization and cross-linguistic category types) have shown that cross-linguistically, multiple uses of TAM markers are often diachronically related. Still, homonymy can be identified where two (or more) meanings/uses of an apparently same form are judged to be unrelated by native speakers.

Monosemy attributes a 'general' or 'abstract' meaning to a marker and accounts for its different uses in terms of context-induced interpretations. In the field of TAM, monosemy has mostly been used in the study of modality (e.g., Kratzer 1981, 1991, Papafragou 2000). Monosemist accounts can potentially produce psycholinguistically significant hypotheses as to the semantic denominator involved in the various uses of a marker. However, there are a number of reasons

[14] Cross-linguistic category types (or, gram-types) stand for tense, aspect, and mood categories commonly grammaticalized across languages. They represent a level of analysis which mediates between language specific TAM markers (grams) and universal conceptual dimensions. Due to their cross-linguistic commonality, they receive special theoretical import in the quest for language universals. Bybee, Perkins & Pagliuca (1994: 301) list the following most commonly attested gram types: completive, resultative, anterior, perfective, past, progressive, habitual, imperfective, agent-oriented modalities, epistemic modalities, speaker-oriented modalities, future, and "those that occur regularly in certain types of subordinate clauses".

[15] The term *polyfunctionality* is used here the way it is used in van der Auwera (1999): It is neutral as to specific types of relatedness among different uses of a marker (e.g., homonymy, polysemy, vagueness, pragmatic extension, basic vs. secondary meaning, etc.). Haspelmath (2003: 212) uses the term 'multifunctionality' in a similar sense.

why a monosemist approach is generally not well-suited in the description and explanation of the semantic functioning of TAM markers. First, although monosemy seeks to associate a TAM marker with a context-independent meaning, most TAM markers are context-sensitive by their very nature: As will be further expounded in Chapter 2, they specify values relative to reference states defined in the communicative background. Second, monosemist accounts attempt to explain polyfunctionality on the basis of synchronic semantic ranges of TAM markers (and often omitting peripheral, but still conventional uses). However, as demonstrated by semantic maps (e.g., Anderson 1982 on 'perfect', van der Auwera & Plungian 1998 on 'modality'), any synchronic semantic range of a marker is the outcome of the stages in its historical development. As a result, even very similar markers in two different languages often occupy different regions on the semantic space. Hence, a monosemous characterization assigned to a TAM marker in one language often does not apply to a comparable marker in the next language.

Polysemy refers to the conventional association of more than one related meanings (uses) with one form (marker) (e.g., Taylor 1995, 2003, van der Auwera 1999). In the cognitive linguistics tradition, polysemy has generally been coupled with Rosch's (1973, 1977) idea of 'prototypes': A linguistic category is associated with a 'prototypical' or 'core' meaning and a number of 'peripheral' ones related to the core in some way. Examples include Lakoff's (1987) 'radial categories' and Langacker's (1991, 2000) 'hierarchical network models'. In the field of TAM, the prototype model is mostly formulated in terms of a 'basic' (or 'primary') meaning and a number of 'extended' (or 'secondary') ones (e.g., Comrie 1985: 18-23). Yet another type of polysemy draws on similarities in the conceptual structure (e.g., 'force dynamics' in Talmy (1988), 'metaphorical mappings' in Lakoff & Johnson 1980, Fleischman 1989, and Sweetser 1990).

The approach of the present framework to the issue of multiple uses of TAM markers is a variant of polysemy: It seeks 'family resemblance' among various uses of a marker. Each conventional use is related to at least one other use, without necessarily being tied to some basic or prototypical meaning. The family resemblance approach to polyfunctionality has been successfully used in linguistic typology, most notably and in the research on cross-linguistic category types (or, gram-types) (e.g., Dahl 1985, Bybee, Perkins & Pagliuca 1994) in semantic maps[16] (e.g., Anderson 1982, 1986, Kemmer 1993, Haspelmath 1997, 2003, van der Auwera & Plungian 1998, van der Auwera, Dobrushina & Goussev 2004), and in certain studies on grammaticalization (Heine 1992, Haspelmath 1998: 31-32).

Accounts based on polysemy often recruit the idea of pragmatic implications (such as conversational implicatures or discourse-conditioned nuances) in addition to conventional

[16] Semantic maps are pictographic tools which map markers from one or more languages onto semantic categories represented on a semantic space (see, e.g., Haspelmath 2003, Croft 2003: 122-156, van der Auwera & Temürcü 2006).

meanings (e.g., Comrie's (1985: 26-29) treatment of the Russian perfective aspect for conveying sequentiality as a discourse-conditioned implicature). In the family resemblance approach adopted here, a use of a marker will be admitted as part of its range of polysemy as long as any conventional association holds, even when the use requires very specific contexts. A use will be taken as arising from a pragmatic implication only when a conventional form-meaning association is absent.

The family resemblance approach does not exclude the possibility, nor deny the potential usefulness, of identifying prototypical vs. peripheral uses, revealing semantic-structural similarities between different uses, detecting homonymies, or formulating monosemous characterizations. It only abstains from taking a priori decisions about the nature of the relatedness among multiple uses of a marker. Once the full semantic range of a marker is discovered at a certain level of specificity, certain uses can be identified as basic, primary, or prototypical, e.g., on the basis of criteria like historical precedence or frequency of use. More than one 'focal' or 'prototypical' use can be detected in addition to peripheral ones (e.g., as proposed in Dahl 1985). Certain uses can be discovered to share a conceptual structuring across different semantic domains. A monosemist characterization can be arrived at, provided that it is based on a sufficiently large number of conventional uses. Homonymy can be brought into play when two uses in the semantic range of a TAM marker are remotely linked so that their synchronic relatedness is not (no longer) transparent to native speakers.

Most of the previous studies in the polyfunctionality of TAM markers, whether predominantly monosemist or polysemist, have attempted to explain the relatedness among multiple uses of a TAM marker from a synchronic-psychological point of view. But in the family resemblance approach adopted here, explanations for polysemy are sought in the semantic developments of the markers throughout their history, in conformity with the research on cross-linguistic category types and grammaticalization.

1.4.7 A semantic space onto which TAM-related uses can be mapped

The idea of a 'multi-dimensional conceptual space' envisaged in Dahl (1985) has been a primary source of inspiration for the present study. Dahl (1985: 33-35) depicts this conceptual space as consisting of the 'building blocks' of a universal theory of TAM:

> The foci and extensions of [cross-linguistic tense, mood, and aspect] categories may be seen as points and regions respectively in a multi-dimensional 'conceptual space'. In a way, the dimensions that make up the space will take the place of ultimate building-blocks – 'quarks'- in the theory (Dahl 1985: 33).

Bybee, Perkins & Pagliuca (1994: 47-48) share Dahl's vision of this conceptual space which underlies the level of cross-linguistic category types and conceive it as being "created by the interaction of cognition and communicative needs". They further maintain that "[t]he universal semantic content is independent of the type of expression that these universal concepts have in particular languages".[17] The semantic framework of TAM categories developed in this work can be seen as an attempt to provide content and structure to this conceptual space.

1.5 Summary

This introductory chapter stated the aims of the dissertation, expanded on the need for defining purely semantic categories in the field of TAM reference, cited the main sources of inspiration of the semantic framework developed here, and clarified the approach of this study to the issue of polyfunctionality.

Chapter 2 below, which marks the start of the theoretical part of the work, introduces *anchoring relations* as basic components of TAM reference in three semantic domains. It also preliminarily exemplifies them and expands on the relations of scope between anchoring relations defined in three (temporal, epistemic, and volitional) semantic domains.

[17] Palmer's (2001:19) level of 'notional features' basically corresponds to the level of 'conceptual space' assumed in Dahl (1985) and in Bybee, Perkins & Pagliuca (1994), and his level of 'typological categories' is comparable to that of 'cross-linguistic category types':

> In a typological study there are three distinct but related sets of concept (three levels of discourse) – the typological categories that are seen as common to various different languages, the grammatical markers associated with them in individual languages, and the notional features that justify the typological identification (Palmer 2001:19).

Part I

A Semantic Framework for Analyzing TAM Categories

Chapter 2

Anchoring relations in three semantic domains

Anchoring relations are components of the semantic value of an utterance which specify values relative to reference states defined in the temporal, epistemic or volitional domains. They situate (or, 'anchor') an abstract predicational content (a *state-of-affairs*, or *SoA*) in the communicative background. The three types of anchoring relations are preliminarily characterized as follows:

- A *temporal relation* specifies a value relative to the *current temporal state* (i.e., speaker's perception of 'now' or other reference time). An utterance may present its content as having occurred before, occurring at, or to occur after this temporal state.
- *An epistemic relation* specifies a value relative to the *current knowledge state* (that of the speaker in the communicative situation or of another source of judgment). In relation to this knowledge state, an utterance may associate a propositional content with certainty, impossibility, various degrees of probability, sources or kinds of evidence, etc.
- *A volitional relation* specifies a value relative to the *current volitional state* (that of the speaker in the communicative situation or of another willful agent). In relation to this volitional state, an utterance may present its content as wished for, feared for, permitted, accepted, etc.

Temporal, epistemic, and volitional anchoring relations are conceived in purely semantic (cognitive, communicative, or general conceptual) terms, independent of any formal criteria. Hence, they can be conveyed by any type of strategy, including grammatical elements, lexical items, supra-segmental units, intonational contours, a combination of those, or with zero-marking. They are not strictly associated with terms like 'tense', 'aspect', 'mood', since the latter are commonly used to denote formal-grammatical paradigms. But the grammatical expression of temporal anchoring relations is typically accomplished by what is generally identified as tense and aspect markers, epistemic relations by markers of epistemic modality or evidentiality, and volitional relations by speaker-oriented moods, sentence-type distinctions or special intonational patterns. The next three sections delimit the semantic enclosure of the three types of anchoring relations using terms which frequently appear in the TAM literature and give simple examples. The labels used here for anchoring relations are preliminary; the 'categories of anchoring' to be used in actual semantic analyses will be defined in Chapter 4 and illustrated in Chapter 5.

2.1 Temporal relations

Temporal relations are typically expressed by markers of tense (e.g., 'past', 'present', 'future'), viewpoint aspect (e.g., 'perfective' vs. 'imperfective', e.g. Comrie 1976), perspectival aspect (as conceived in Dik 1997: 225) and/or temporal adverbs. Formal units primarily identified as 'moods' (e.g., 'realis' and 'irrealis' markers), indicators of temporal type ('Aktionsart' markers), and specific verb classes can also convey temporal relations, either on their own or in combination with other strategies. The following English sentences exemplify different temporal relations. Using preliminary labels, (2.1) and (2.2) can be identified as expressing 'future', (2.3) 'perfect', (2.4), 'habitual-gnomic', and (2.5) and (2.6) 'present continuous':

(2.1) The match will start at eight.

(2.2) The match starts at eight.

(2.3) Mary has lost her keys.

(2.4) The earth revolves around the sun.

(2.5) John is writing a letter.

(2.6) The key is on the table.

2.2 Epistemic relations

The term 'epistemic' is used in this study in a broad sense, to cover both estimations of likelihood (epistemic modality) and specifications of evidential dependency (evidentiality). Epistemic relations can be conveyed by a variety of strategies, e.g., verbal suffixes, auxiliary verbs, particles, adverbs, or mental state predicates. A language may also use more than one strategy in conveying basically the same epistemic relation.[18] Grammatical elements primarily identified as tense or mood markers are often conventionally associated with epistemic relations or entail epistemic values besides temporal ones. The lack of epistemic modality and evidentiality (i.e., 'certainty' or 'factuality', which tends to be formally unmarked cross-linguistically) also counts as an epistemic relation. To give some simple examples from English, (2.7) and (2.8) express different degrees of 'epistemic possibility', (2.9) 'evidentiality', and (2.10), 'certainty':

(2.7) Mary might have come yesterday.

(2.8) John will probably fail.

(2.9) Apparently, she has been fired.

(2.10) John gave this book to me.

2.3 Volitional relations

Volitional relations include various attitudes which stem from an agent's faculty of will. They are typically expressed by (inflectional) moods, modal suffixes or particles or sentence type distinctions. They include attitudes such as 'wish' (including, 'hope' and 'desire'), 'pleasure', and 'acceptance'. For example, (2.11) and (2.12) below express 'wish' (with different epistemic presuppositions) and (2.13) expresses 'pleasure':

(2.11) If only John came with us.

(2.12) I hope he understood what I said.

(2.13) I'm glad that you are here.

In the examples above, the indexation of a volitional attitude is highly transparent. All directive utterances also express 'wish', because they basically signal what the speaker wants, prefers, favors, or consents to be realized. The same holds for questions, because they are complex directives which request or urge the addressee(s) to provide an answer.[19] (2.14) illustrates 'wish' in an order, (2.15) in a request, (2.16) in a permission, (2.17) in an advice, and (2.18) in a question:[20]

(2.14) Give me the keys!

(2.15) Could you give me a pen?

(2.16) He may leave now.

(2.17) You should see this movie.

(2.18) What are you looking for?

Critically, in the current framework assertive utterances are taken as expressing a specific volitional relation. Assertions relate a semantic content to the speaker's will in a different way than expressions of wish or directive utterances. In making a sincere assertion, the speaker *accepts* a certain representation of the world as reflecting reality (although she does not explicitly state this).

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[18] See Nuyts (2001a) for alternative strategies of expressing epistemic modality in Dutch, German, and English.

[19] For treatments of questions as epistemic requests, see, e.g., Katz & Postal (1964) and Searle (1969: 69, 1975a: 14).

[20] These utterances can be interpreted differently depending on the speaker's intentions in different communicative contexts. For instance, (2.15) can be meant as a question, and (2.16) can express epistemic possibility. Each of them can also be used for performing a variety of 'indirect' illocutionary acts in specific contexts. What is relevant here is that they are conventionally associated with the directive uses mentioned here.

2.4 Distinguishing epistemic and volitional relations

In the literature on TAM, temporal dimensions (e.g., as expressed by tenses and aspects) have been clearly distinguished from epistemic and volitional ones (leaving aside discussions such as whether the 'future' is basically temporal or epistemic). But epistemic and volitional dimensions have often been conflated together. Linguists and philosophers of logic have commonly assumed a basic divide between a level of 'propositional content' and a level of 'subjective attitudes' (or, 'mood') in the meaning of a sentence. Epistemic and volitional categories are often packed into a single semantic paradigm even in some fine-grained grammatical models. For instance, in Functional Grammar, 'hope' and 'wish' are located at the same hierarchical level (Level 3) as 'subjective epistemic modality' and 'evidentiality' (Dik 1989/1997: 66).

Similarly, the judgment-related notion of 'certainty' (or, 'factuality') is frequently confused with the will-related notion of 'assertion', although the assertion/non-assertion distinction is actually independent of the specific epistemic assessment involved in an utterance.[21] The labels 'assertive', 'indicative', 'declarative' and 'affirmative' are often used ambiguously between epistemic and volitional-illocutionary senses.[22]

2.5 One anchoring relation from each domain

Every utterance is associated with one relation from each of the three domains of anchoring in its main clause. The examples below show how simple sentences can be roughly analyzed for their semantic components in the three domains (Here too, labels used for anchoring relations are preliminary):

(2.19) John will take the train. ('future', 'certainty', 'assertion')

(2.20) John might take the train. ('future', 'epistemic possibility', 'assertion')

(2.21) Take the train! ('future', ' epistemic possibility', 'wish')

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[21] As Lyons (1985: 179) states, "[…] one can not only assert or deny, but also query, presuppose, or even consider (in soliloquy or thought), the factuality of a proposition". Conversely, one can assert or deny not only a certainty, but also a possibility, a conjecture, or an inference. On this issue, see also Hooper (1975), who takes 'factivity vs. non-factivity' as a different parameter from 'assertion vs. non-assertion' in classifying verbs which take sentential complements. Foley & Van Valin (1984) and Bybee (1985: 169-170) also clearly distinguish 'assertion' from the expression of speaker's commitment to the truth of a proposition. Bybee, Perkins & Pagliuca's (1994) remark is instructive:

> Considerable evidence suggests that it is not the domain of truth or fact that is the relevant domain for mood, but rather the domain of assertion and non-assertion that is relevant […] That is, mood does not index the truth value of a proposition in any abstract sense, but rather tells us the extent to which the speaker is willing to ASSERT the truth of a proposition (Bybee, Perkins & Pagliuca 1994: 239).

[22] The assertive mood is often implicitly assumed to be there whenever a clause is not 'directive' or 'subjunctive', but it not explicitly identified as such. This is apparently because both 'certainty' and 'assertion' are formally unmarked in the overwhelming proportion of languages.

(2.22) John may be taking the train. ('present', 'epistemic possibility', 'assertion')

(2.23) John may have taken the train. ('past', 'epistemic possibility', 'assertion')

(2.24) I hope John took the train. ('past', 'epistemic possibility', 'wish')

(2.25) If only John had taken the train! ('past', 'counterfactual certainty, 'wish')

(2.26) John took the train. ('past', 'certainty', 'assertion')

Generally, only one or two of the three anchoring relations are prominent in a main clause. For instance, while the temporal relation 'future' is prominent in (2.19), it is less so in (2.20), and least so in (2.21). Similarly, both the command in (2.21) and the expression of hope in (2.24) entail epistemic possibility (rather than certainty) about the realization of the expressed action,[23] but this epistemic dimension is not as prominent as in (2.20), (2.22) or (2.23). Most of the descriptive statements express 'certainty' and 'assertion' as non-prominent anchoring relations. For instance, (2.26) entails both 'certainty' and 'assertion' in addition to the prominent category 'past'; it semantically contrasts with (2.23) (which entails 'epistemic possibility' and 'assertion') and with (2.25) (which entails 'counterfactual certainty' and 'wish').

To say that every utterance expresses one temporal, one epistemic and one volitional relation at once is not to say that these relations are totally independent from each other. Due to general cognitive and communicative reasons, certain relations in one domain are more compatible with some relations in the other domains. For instance, 'wish' generally (but not always) combines with 'epistemic possibility' and 'future' rather than with 'certainty' and 'past'. Similarly, 'certainty' appears more often in utterances with 'past' or 'present' than those with 'future', due to the inherent indeterminacy of the latter.

2.6 The hierarchy of scope for anchoring relations

The three types of anchoring relations are asymmetrically related through scope:

- A temporal relation takes scope over a SoA:

  Temporal locations necessarily contain SoAs, but not vice versa. In other words, events necessarily occur (and states obtain) in time.

- An epistemic relation takes scope over a temporal relation:

[23] A speaker would not urge nor hope for an action if she was certain that it would be accomplished. Indeed, Givón (1995: 121-122) also shows that expressions of 'deontic modality' (which, in his terminology, subsumes both directive utterances and expressions of wish) entail uncertainty. Givón's treatment differs from what is suggested here in that he attributes the sense of uncertainty in such expressions directly to their being future-oriented.

Judgments necessarily contain temporally qualified events or states, but not vice versa. In other words, an epistemic evaluation is always about an event or state which is already temporally qualified.

- A volitional relation takes scope over an epistemic relation:

  Every volitional attitude necessarily contains a judgment, but not vice versa. In other words, every volitional attitude towards an event presupposes an assessment about the truth, possibility, or likelihood of that event. But one can have any kind of epistemic evaluation as to the truth of an proposition regardless of whether one wants it to be real (or feels fine about it) or not.

These considerations suggest the following scope hierarchy, which will be more accurately defined in the context of a finite sentence in section 3.1.2:

(2.27) Volitional relations > epistemic relations > temporal relations > SoA

This hierarchy suggest that epistemic evaluations mediate between what one perceives in the course of time and how one wants (or intends) to change this course. This makes sense in the context of actions in general: An intentional agent acts on the basis of her judgments as to truth or likelihood of what has happened, is happening, and is to happen .[24]

2.7 Spatial relations, non-relational aspects and temporal types

Not all semantic dimensions that are relevant for TAM reference count as anchoring relations. For instance, specifications of 'place' or 'space' are not taken as clausal anchoring relations, although they typically show up as relative categories. Spatial relations can be expressed in three ways: First, any SoA participant (i.e., 'entity') is associated with spatial qualifications[25], which can remain implicit or be explicitly given as in (2.28). Second, a place can be conceived as a participant of a SoA (i.e., expressed as an argument of a predicate) as in (2.29). Lastly, a spatial expression may specify the location for an occurrence as a whole, as in (2.30):

(2.28) The man on the corner is looking at me.

(2.29) I live in London.

(2.30) There was a film festival in Antwerp last week.

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[24] Nuyts' (2001) remark emphasizes the role of epistemic evaluations in the success of human actions:

> Estimations of the degree to which states of affairs are true of the world are no doubt an essential ingredient of any kind of human perception and action, as the veridicality of a human's understanding of the world is critical for his/her adequate functioning in it (and ultimately, for his/her survival) (Nuyts 2001: 23).

[25] The term 'space' is used here in its most general sense, which includes the three-dimensional physical space as well as other conceivable modalities of existence.

Spatial relations such as those involved in (2.30) above can be taken as constituting a separate semantic layer which takes scope over the predication as a whole[26]. Even then, they are lower in scope than temporal anchoring relations, because spatial entities and relations are necessarily conceived in time. What is referred to as a *SoA* in the present framework can then be seen as a predicational content already situated in space.

As stated the beginning of this chapter, anchoring relations are by definition relative, i.e., their interpretation requires the identification of reference states (which can be implicit in the communicative background or explicitly specified in the utterance). Semantic components associated with 'quantificational aspects' (e.g., Dik 1997: 221), 'phasal aspects' (e.g., Dik 1997: 223), and 'bounders' (Bybee & Dahl 1989: 86, Bybee, Perkins & Pagliuca 1994: 87-88) will not be taken here as temporal anchoring relations, because their interpretation does not require an identification of a(n) (explicit or implicit) reference time. They will be taken as non-relative dimensions inherent in the temporal structures of SoAs.

Similarly the *temporal type* of a SoA (variously referred to in the literature as 'inherent aspect', 'situation-type', 'SoA-type', 'Aktionsart', 'eventuality', or 'actionality') does not qualify as an anchoring relation, because it stands for temporal information which is inherent to a designated SoA. For instance, it is impossible to construe an event of 'freezing up' without an inherent duration. Although the current analytic framework is not primarily about inherent temporality, reference to temporal types will be necessary because they often interact with anchoring relations within the total semantic value of an utterance. Figure 1 shows the terminology used throughout the work in classifying SoAs as to their temporal types. It is based on the 'Aktionsart' distinctions proposed in Vendler (1957), which are later adopted and elaborated in Dowty (1979) and Van Valin & Lapolla (1997). The class of 'semelfactives' is Smith's (1991, 1997) addition to Vendler's original four main classes. The five main temporal types are distinguished on the basis of four binary parameters: (1) whether a SoA is (virtually) instantaneous or durative (+/-punctual), (2) if +punctual, whether it brings about a change of state or not (+/-change), (3) if -punctual, whether it necessarily involves an end-point in time or not (+/-telic), and (4) if -telic, whether or not it requires an energy input (+/-energy).[27]

[26] This is so, for instance, in the layered clause structures of Functional Grammar (e.g., Dik 1989/1997: 52).

[27] For more information about the binary parameters used in classifying SoAs according to their inherent temporal values, see, e.g., Comrie (1976: 41-51), Smith (1997: 17-37) and Van Valin & Lapolla (1997: 91-113). Sasse (2002) gives a survey of the literature on aspect (inherent temporality as well as viewpoint aspect) and reviews some recent publications on the topic. See also Bickel (1997), Tatevosov (2002) and Rothstein (2004) for recent treatments of inherent temporality.

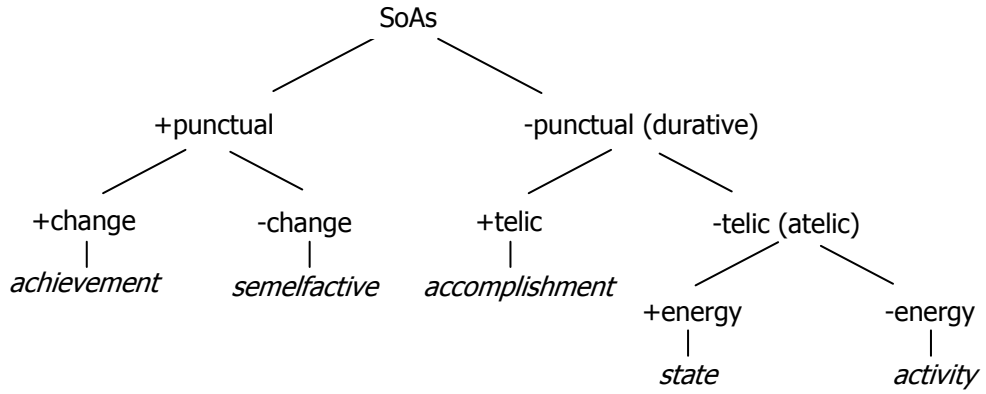

Figure 1. *A classification of SoAs as to their temporal type.*

SoAs can further be classified as to whether they involve 'iteration' (e.g., Comrie 1976: 43), the agent's 'control' (e.g., Dik 1997: 112-115), or 'causativity' (e.g., Van Valin & Lapolla 1997: 100-101), but such distinctions will not be necessary for the analytic goals of this dissertation.

Achievements, semelfactives, accomplishments, activities and states are exemplified below with simple past sentences in English:

(2.31) The ball popped. (achievement)

(2.32) John broke the vase. (achievement)

(2.33) John glanced at the visitors. (semelfactive)

(2.34) Jill knocked on the door. (semelfactive)

(2.35) The water froze up. (accomplishment)

(2.36) John ate two apples. (accomplishment)

(2.37) John wrote a letter. (accomplishment)

(2.38) Jill walked (for hours). (activity)

(2.39) John worked (for days). (activity)

(2.40) John had a headache. (state)

(2.41) The man stood on the corner. (state)

It is important to note that within the current framework, the classification given in Figure 1 is primarily applied to SoAs, which are taken here as components of the sentence meaning and not of the sentence form. As such, they do not necessarily stand for the properties of formal-structural

elements such as verbs or predicates, as they usually do in the literature.[28] The temporal type of a SoA should be detected by looking at the semantic value of an utterance as a whole (as advocated, e.g., in Verkuyl 1972, 1993 and Dik 1997: 106): Not only the verb but also the arguments, adjuncts, aspect or tense markers, and even the mood of an utterance can play a role in the correct identification of the temporal type. To repeat some well-known examples, while (2.42) and (2.44) express (atelic) activities, (2.43) and (2.45) express (telic) accomplishments. Similarly, while the assertive sentence in (2.46) involves a state (of being seated), the directive sentence in (2.47) involves an achievement (a punctual change which indicates the entry to the state of being seated):

(2.42) He wrote poems.

(2.43) He wrote a poem.

(2.44) He ran for hours.

(2.45) He ran to the park.

(2.46) He is sitting there.

(2.47) Sit!

Throughout the work, the term *event* will be used to denote dynamic SoAs in general, which include all temporal types but states. The term *occurrence* will be used for a happening of an event as well as for a temporary obtainment of a state.

Within the class of states, four schematic subtypes will be distinguished, namely, *state of result*, *state of possibility*, *state of necessity* and *state of willingness*. A state of result is a state which is understood as a consequence of a past event or process. It corresponds to Bybee, Perkins & Pagliuca's (1994: 54) semantic label 'resultative', which signals "that a state exists as a result of a past action". It includes what Anderson (1982: 228, 259) calls 'intransitive uses of result-state' (as in 2.48) and 'state-passives' (as in 2.49):

(2.48) The sun is set. (Anderson 1982: 232)

(2.49) The house is all painted now. (Anderson 1982: 259)

State of result is similar to 'perfect'. But while perfect expresses a past event and imply results in the present, state of result exclusively focuses on a present situation. The past process is ultimately backgrounded; it is only conceptually entailed in the meaning of the stative predication.

[28] Van Valin & Lapolla (1997: 92) adopt distinct terminologies for 'types of SoAs' and 'properties of verbs and other predicates' (Aktionsarten), and use the labels in Figure 1 here only for the latter. But Dik (1989/1997: 106) applies a similar classification to SoAs themselves, which he takes to correspond to the "conception of something which can be the case in some world" rather than to formal units of a sentence.

A *state of possibility* is one which involves a potential for the realization of a certain event. This potential can be due to an intrinsic power (e.g., an ability or capacity) of the primary participant of the SoA (i.e., what van der Auwera & Plungian 1998) call 'participant-internal possibility'). For example, (2.50), (2.51) and (2.52) express ability (or capacity). A state of possibility can also be attributed to conditions external to the primary participant of a SoA (i.e., the type of modality called 'participant-external possibility' in van der Auwera & Plungian 1998). This subtype may (but not necessarily does) include a socially or institutionally granted permission, and may or may not refer to moral or ethical norms or values. Sentences in (2.50) to (2.54) refer to conditions which enable or allow the subject to take the mentioned action. (2.55) and (2.56) additionally entail an element of permission (A state of possibility can also be explicitly designated by predicates like *be able to* or *be capable to, be allowed to,* etc. Here they are exemplified as they are conveyed by grammatical strategies, namely, the auxiliary verbs *can* and *may*):

(2.50) Some spiders can jump.

(2.51) Boris can get by with sleeping five hours a night. (van der Auwera & Plungian 1998: 80)

(2.52) This camera can record for six hours.

(2.53) To get to the station, you can take bus 66. (van der Auwera & Plungian 1998: 80)

(2.54) The lion cannot get out of its cage.

(2.55) We may smoke here. (e.g., permission granted by institutional regulations)

(2.56) John may not come to the party. (e.g., permission denied by John's parents)

'Dispositional statements' identified in Smith (1997: 34) as denoting "ability of preference" rather than referring to actual occurrences, can also be subsumed under the general label state of possibility:

(2.57) Dwight plays bridge. (i.e., can/likes to play bridge). [Smith 1997: 34]

A permission which is partly or wholly granted by the speaker will be taken as involving a directive use rather than describing a state of possibility.

The term s*tate of necessity* covers stative SoAs which include a need for an action. It can originate from conditions internal to the primary participant of the SoA (in which case it corresponds to 'participant-internal necessity' -or 'need'- in van der Auwera & Plungian's (1998) classification). A state of necessity can also be due to factors external to the primary participant (in which case a 'participant-external necessity' is at stake). The latter type may involve a socially or institutionally imposed obligation, which may further be coupled with a moral or ethical norm. (2.58) and (2.59) are examples for state of necessity due to the internal conditions of a participant.

(2.60) to (2.62) exemplify states of necessity as imposed by circumstantial conditions. (2.61) and (2.62) additionally contain an element of obligation:

(2.58) Boris needs to sleep ten hours every night for him to function properly.
(van der Auwera & Plungian 1998: 80)

(2.59) Animals have to eat in order to survive.

(2.60) To get to the station, you have to take bus 66. (van der Auwera & Plungian 1998: 80)

(2.61) John must return home before midnight. (e.g., an obligation imposed by John's parents)

(2.62) One must take off his shoes before he enters a mosque. (e.g., an obligation due to religious rules)

Expressions of participant-external necessity in which an obligation is imposed or endorsed by the speaker will be taken as directive utterances rather than expressions of state of necessity.

A *state of willingness* is one which involves an agent's willingness to perform an action. In English, *will* is sometimes used to convey this semantic dimension, as illustrated in (2.63) and in Bybee, Perkins & Pagliuca's (1994) example for 'willingness' (2.64):

(2.63) She will not obey. (e.g., she doesn't want to)

(2.64) I'll help you. (Bybee, Perkins & Pagliuca 1994: 178)

Dimensions of stativity often connote a certain direction in time. For instance, a state of result is understood in relation with past events; a state of necessity or willingness in relation with the future; and a state of possibility with habitual (regular or temporally unrestricted) occurrences. But these temporal connotations are not part of relative temporal specifications expressed in an utterance. They rather make part of the conceptualization of a designated SoA. This predicational content can be related to the reference time in various ways, e.g., as past, present, habitual, or future.

2.8 Anchoring vs. grounding

The idea of anchoring is closely related to that of 'grounding' proposed in Cognitive Grammar (e.g., Langacker 1987, 1991, 1997, 2002a,b; Brisard 2002a,b) in accounting for the deictic nature of tense and mood markers in finite clauses, and of demonstratives, articles, and certain quantifiers in fully specified nominal expressions. Grounding elements are "grammatical predications that indicate the relationship of a designated entity to the ground or situation of speech, including the speech event itself, its participants, and their respective spheres of knowledge" (Brisard 2002a: xi). The account of 'anchoring' presented here differs from that of 'grounding' in a number of ways. First, while grounding elements are grammatical markers, anchoring relations can also be

expressed by non-grammatical strategies, for they are defined in purely semantic terms.[29] Second, (as a consequence of their grammatical status) semantic dimensions expressed by grounding elements are always offstage (non-focal, backgrounded) and schematic (vaguely delimited). But anchoring relations (while most typically offstage) can also appear onstage (e.g., when expressed by mental state predicates) and they can be very specific (e.g., when specified by adverbial elements). Third, grounding defines one single relation between a single vantage point (the ground) and a profiled relational content. Consequently, it assumes one single layer which takes scope over more objectively construed elements (Langacker 1997: 72; Brisard 2002a: xiv). But the framework of anchoring here recognizes three vantage points (centers) in three distinct domains, and accordingly motivates three layers of anchoring in a main clause, which are interrelated via scope relations.[30]

Just like grounding, anchoring can be applied to both clausal and nominal paradigms. This study is primarily concerned with anchoring of SoAs at the level of the clause, which corresponds to 'clausal grounding' or 'profiling of relationships' in Cognitive Grammar. Analogous phenomena in the nominal paradigm, which correspond to 'nominal grounding' or 'profiling of entities', will not be addressed.

2.9 Anchoring vs. Sweetser's conceptual domains

The three domains of anchoring introduced above are originally inspired by the three conceptual domains proposed in Sweetser (1990). These are the *content (*or, *sociophysical) domain*, which is related to the courses of events in the real world, the *epistemic domain*, which involves aspects of knowledge of the speaker, and the *speech-act* domain, which involves the illocutionary force exerted by the speaker. While there is a certain amount of overlap among the three domains assumed here and those in Sweetser (1990), their semantic enclosures do not exactly match. The present study also expands on Sweetser's (1990: 75) insight that "[a]n utterance is content, epistemic object, and speech act all at once", by emphasizing that every utterance expresses one anchoring relation from each of the three domains of anchoring.

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[29] The account of anchoring presented here basically applies the idea of grounding in Cognitive Grammar to the purely semantic domain. Indeed, Nuyts (2002), on the basis of evidence concerning alternative strategies of expression for epistemic modality in Dutch, German and English (identified in Nuyts 2001a in more detail) and with reference to general cognitive and communicative considerations, maintains that 'grounding' should be reinterpreted as a 'conceptual' (i.e., semantic) rather a 'linguistic' (i.e., formal-structural) operation.

[30] In Cognitive Grammar, the grounding relation is taken to be essentially epistemic, in the sense that it specifies instructions as to how to locate a designated entity or relationship within a shared knowledge frame (see Langacker 1987: 126-127, 2002b: 29; Brisard 2002b: xiii-xv). The term 'epistemic' is used in the current framework in a more restricted sense, to specify semantic components related to judgment and reasoning. Epistemic relations constitute only one of the three layers of anchoring in the semantic value of an utterance.

2.10 Anchoring vs. the layered structures in Functional Grammar

The three layers of anchoring are comparable to different layers (or levels) of the clause structure in Role and Reference Grammar (e.g., Van Valin 1990, Van Valin & Lapolla 1997) and especially, to those of the underlying clause structure (UCS) in Functional Grammar (e.g., Dik 1989/1997, Hengeveld 1987, 1990).[31] Similar to 'operators' in the UCS, anchoring relations are organized in a hierarchy of scope relations. But the layered semantic value proposed in the present framework is different from the UCS in a number of ways. First and foremost, in the standard versions of Functional Grammar, such structures incorporate aspects of formal expression,[32] but the layered semantic value defined here is purely semantic**.** Second, while Functional Grammar allows 'no value' for some layers, the current proposal identifies in every sentence one anchoring category from each domain. Third, the three layers of anchoring in the current framework do not exactly match the levels of the UCS, although temporal anchoring relations partially correspond to Level 2 ('Extended Predication'), epistemic relations to Level 3 ('Proposition') and volitional relations to Level 4 ('Clause') in Dik's (1989/1997) framework.

2.11 Parameters along which the three types of anchoring relations differ

2.11.1 Degree of subjectivity

Relations defined in hierarchically higher levels of anchoring involve more *subjectivity* compared to those defined in the lower levels. People normally diverge in what they want to be real (or in what they admit to be real) more than in what they know (or believe or suspect) to be true. Similarly, people's epistemic assessments towards a certain proposition normally exhibit more divergence than how they situate a certain event or state in time. In other words, a speaker's creative involvement is higher in forming judgments than in situating SoAs in time, and highest in the orientation of their will.[33]

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[31] Semantically motivated layered structures of the similar kind are also assumed in Nuyts (2001a: 347) and in some semantically-oriented versions of Generative Grammar (e.g., Cinque 1999).

[32] Nuyts (2001a: 256, 305-306) shows that 'linguistic' (i.e., formal-structural) concerns percolate the design of the layered structures assumed in Functional Grammar (as well as in Role and Reference Grammar). Similar observations are voiced in Anstey (2002), with regard to standard versions of Functional Grammar. The hierarchical structure proposed in the present study is particularly similar to that proposed in Anstey (2002). It differs from hierarchy of 'qualifications' proposed in Nuyts (2001a: 347) primarily in that it represents the conventional meanings of utterances, while Nuyts (2001a: 304-366) wants to apply his hierarchy to the human conceptual system in general.

[33] The lower degree subjective divergence in the temporal domain is presumably linked to the social need of 'objectivizing' time. As Benveniste (1966) notes:

> Dans toutes les formes de culture humaine et à toute époque, nous constatons d'une manière ou d'une autre un effort pour objectiver le temps chronique. C'est une condition nécessaire de la vie des sociétés, et de la vie des individus en société (Benveniste 1966: 6).

The high degree of subjectivity (and consequently, of intersubjective divergence) in the volitional domain gives rise to different illocutionary acts which reflect interactions of the speaker's will with that of the addressee(s). Various illocutionary acts, e.g., promises, advices, offers, and polite requests, involve 'intersubjectivization', in Traugott's (1999, 2003) use of the term: They not only index volitional attitudes or interests of the speaker, but also those of the addressee(s).

2.11.2 Visibility and delimitability

When the three types of anchoring relations appear as offstage semantic elements in the main clause of an utterance, Brisard's (2002a) metaphor of a 'frame of a picture', which he employs in describing grounding predications in Cognitive Grammar, will also apply to them:

> […] the categories and meanings that grounding predications have to offer […] cannot accurately be seen as explicit topics of reflection. That would be like questioning the frame of a picture, when what people normally do is to focus on its (referential) contents (Brisard 2002a: xxv).

The three types of anchoring relations can be seen as furnishing different 'layers' of this frame. The temporal relation constitutes the innermost layer; therefore it is the least offstage (hence the most 'visible') component among the three anchoring relations. The volitional relation resides at the outermost layer; therefore it is the most offstage (and the least 'visible') component.

Despite their low degree of visibility, volitional relations provide the layer which stands 'closest' to the level of communication: A temporal or an epistemic relation always appears in the context of an illocutionary act, which first and foremost indexes a certain relation to the speaker's immediate will.

The higher degree of 'objectivity' and 'visibility' in the lower domains of anchoring allows for more accurate and more fine-grained delimitations. For instance, while speakers often specify a temporal distance with high degrees of accuracy (e.g., 'on Thursday at eleven', 'twenty six minutes ago'), an estimation of likelihood is generally vaguely specified (e.g., 'probably', 'maybe'), and the strength of an appeal is more vaguely, if at all (e.g., 'should' vs. 'must' for an advice vs. an obligation).

The above mentioned asymmetries along the dimensions of subjectivity, visibility, and delimitability do not preclude a uniform treatment of the three types of anchoring relations. All the three types of anchoring relations are still 'subjective' (and eventually, 'deictic') in the sense that they are relative to reference states defined in the communicative background, which are ultimately tied to speaker's cognitive faculties at the time of utterance.[34]

[34] Lyons (1982) admits that space and time, which have been considered to represent 'objective' domains in the Western empiricist tradition, may involve also involve subjectivity:

2.12 Summary

This chapter introduced the idea of *anchoring* in three (the temporal, the epistemic, and the volitional) semantic domains. It showed that the main clause of every utterance can be analyzed into a volitional, an epistemic, and a temporal relation, which take scope over each other in this order. It also delimited certain semantic dimensions relevant for TAM reference as *not* making part of anchoring relations, such as spatial specifications, non-relational aspects, and temporal types (Aktionsart distinctions). Lastly, it pointed to certain differences between temporal, epistemic and volitional relations in connection with their hierarchical positions in the semantic value of an utterance.

The next chapter defines higher-order entities in the three domains of anchoring. These container-type entities will serve in motivating a hierarchical structure for the semantic value and in defining anchoring relations in a more explicit way.

> In the last resort, I have perhaps no valid reason for treating the spatiotemporal co-ordinates of deixis as being basically objective - nor reason, that is to say, other than adherence to the same ontological prejudice as leads me to treat what I call first-order nominals as being more basic than second-order or third-order nominals […] This prejudice may be no more than the residue of a fairly Anglo-Saxon empiricism! (Lyons 1982: 122).

Chapter 3

Higher-order entities and their perspectival qualifications

This chapter introduces the higher-order entities defined in the three domains of anchoring. It renders anchoring relations in terms of the qualifications of these entities relative to cognitive states which are taken as reference points in the respective domains.

3.1 Entities defined in the three domains of anchoring

3.1.1 Temporal locations, thoughts, projections

The higher-order entities defined in the three domains of anchoring are *temporal locations*, *thoughts*, and *projections*:

- A temporal location stands for a general object of temporal perception. It corresponds to a time-point conceived in abstraction from its contents and possible qualifications (such as past, present, future, etc.).
- A thought stands for a general object of knowledge,[35] conceived in abstraction from its contents and possible qualifications (such as certain, likely, unlikely, hypothetical, counterfactual, etc.).
- A projection stands for a general object of will. Any specific *projection* is a model of the world construed around the will of an intentional agent.[36] Projections are objects of both wishes and assertions. In the former, the speaker wants (or does not want) a certain projection to be realized, and in the latter, she accepts (or rejects) one as already real. A projection can be qualified with respect to a specific will as wished for, accepted, permitted, urged for, etc.

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[35] The term *thought* is used here to denote a general object of cognition. It does not entail any (subjective or objective, epistemic or evidential) qualification as to the truth, falsity, probability or likelihood of a propositional content. The term *thought* was preferred here to the terms *knowledge*, *belief*, *opinion*, or *assumption*, which all connote specific epistemic attitudes. For instance, the term *knowledge* is normally used for 'justified beliefs'. While *belief* is a more general term in epistemology, in ordinary language and in linguistic semantics, it is associated with highly subjective, non-justified pieces of information. Likewise, both *opinion* and *assumption* imply a subjective conviction. The use of the term *thought* here is similar to Frege's (1918) conception of the notion *Gedanke* (actually translated into English as 'thought' by Geach & Stoothoff in Beaney (1997)), in that it entails neutrality as to possible epistemic evaluations: "I call a "thought" something for which the question of truth can arise at all" (Frege 1918/1997: 328).

[36] The phrase 'model of the world' does not imply a correspondence theory of meaning and truth; it only refers to a certain type of cognitive representation. Neither does it entail the idealistic contention that the 'world' be a 'subjective representation'. It only implies that communication (and possibly, other types of intentional behavior) involves mental reconstructions of the world which relate to the will of the communicator in a certain way (e.g., as accepted, wished for, feared, hoped for, imposed, permitted, etc.).

A state-of-affairs (SoA) is a semantic content which consists of the predication of a property to an entity, or of a relation to a constellation of entities.

Temporal locations, thoughts, and projections are entities with *containment* properties:

- A temporal location contains SoAs. A qualified temporal location which contains a specific SoA corresponds to a semantic content called a *proposition*.[37]
- A thought contains propositions. A qualified thought which contains a specific proposition corresponds to a semantic content called a *reflection*.
- A projection contains reflections. A qualified projection which contains a specific reflection corresponds to a semantic content called a *message*.

Table 1 lists these entities, their qualifications, and the corresponding semantic contents. Qualification (predication) is represented with square brackets, and containment (scope) with round brackets.

Entity type	**Qualification**	**Qualified entities with content**		**Semantic content**
general entity: *e*	general predicate:[38] *P* (a property or a relation):	$P[e_1,\ldots e_n]$	:	SoA
temporal location: *t*	temporal qualification: *T*	$T[t](SoA_1,\ldots SoA_n)$	:	proposition
thought: *h*	epistemic qualification: *E*	$E[h](proposition_1,\ldots proposition_n)$	:	reflection
projection: *p*	volitional qualification: *V*	$V[p](reflection_1,\ldots reflection_n)$	:	message

Table 1*. Entities, their qualifications and the corresponding semantic contents.*

3.1.2 Scope hierarchy due to containment

The unidirectional relations of containment presented above trivially yield a hierarchical semantic value. In the context of a sentence:

- A SoA is represented as $P[e_1,\ldots e_n]$, *P* standing for a predicate and *e* standing for an entity (an argument of the predicate).
- A proposition is represented as $T[t](P[e_1,\ldots e_n])$, *t* standing for a temporal location and *T*, a temporal qualification.

[37] A 'proposition' conceived as such includes a temporal value, but is independent of epistemic and volitional attitudes. This use of the term is different from that in Functional Grammar (e.g., Dik 1989/1997), where a proposition is taken as a higher-order entity which *includes* a certain epistemic attitude of the speaker. But the present conception of the term 'proposition' complies with the frequently voiced statement that sentences with different 'moods' or 'subjective attitudes' can have the same 'propositional content'.

[38] A predicate can be a 'property' (for a single entity) or a relation (for more than one entity).

- A reflection is represented as $E[h](T[t](P[e_1,\ldots e_n]))$, h standing for a thought and E, an epistemic qualification.
- A message is represented as $V[p](E[h](T[t](P[e_1,\ldots e_n])))$, p standing for a projection and V, a volitional qualification.

This last semantic content, namely, a message in the context of a sentence, corresponds to the semantic value of an utterance. In the formula above, *V[p], E[h], and T[t]* respectively correspond to volitional, epistemic, and temporal anchoring relations, and $P[e_1,\ldots e_n]$ corresponds to the abstract predicational content (SoA). The semantic value of an utterance is hence simply represented as follows:

(3.1) Volitional relation(Epistemic relation(Temporal relation(SoA)))

What we achieve is a hierarchical structure of sentence meaning, which is derived from the containment properties of the higher-order entities defined in the three domains of anchoring.

3.1.3 Semantic contents in the context of background cognition

Entities in the three domains of anchoring have been associated above with richer contents than what is expressed in individual clauses. Each clause expresses only one SoA, but a temporal location may actually contain many SoAs, each consisting of different entities and predicates. Each clause expresses at most one proposition, but a thought may actually contain many propositions, which can be associated with various different temporalities. Each clause expresses at most one reflection, but a projection may actually contain many reflections, which may include not those associated with certainty as well other epistemic attitudes. In other words, SoAs, propositions, reflections and messages expressed in individual utterances are always singled out from larger cognitive networks. They are meant and understood against these background structures rather than as isolated pieces of information. The restriction of at most one SoA, one temporal relation, one epistemic relation and one volitional relation per clause is presumably due to the limitations set by the human cognitive processing capacities and by unidimensionality of the medium of linguistic communication (time).

This understanding of semantic contents is in line with the basic tenets of the cognitive linguistics tradition, which aims to account for linguistic meaning on the basis of larger conceptual structures or 'imagery', e.g., Johnson's (1987) 'image schemas', Talmy's (1988, 2000) 'schematic systems', Langacker's (1987) operations of 'scope', Fauconnier's (1985, 2000, 2004) notion of 'background cognition'. It is particularly compatible with the mental space theory (e.g., Fauconnier 1985, Fauconnier & Sweetser 1996, Fauconnier & Turner 1998), which takes individual sentences as bundles of information which select, manipulate, elaborate, and enrich the contents of cognitively represented discourse structures called 'mental spaces'.

This connectivity of expressed contents to background structures enables speakers to make anaphoric reference to entities and relations defined in the universe of discourse. It also explains how the confirmation of a piece of information can trigger a chain of inferences. As Sweetser & Fauconnier's (1996) following remark make it clear, when we express our wish for something to occur (or to have occurred), we actually allude to a more general picture (projection) of the world:

> […] when we say "I wish John had come to the meeting", we mean that we view as preferable a world that is much like ours except that John came to the meeting. Crucially, the speaker does not mean that he or she would prefer a world in which John came to the meeting and World War III was announced over the radio at the same moment (Sweetser & Fauconnier 1996: 3).

The present account extends the cognitive mechanisms of 'selection' and 'perspective' in Cognitive Grammar into three special domains.[39] While in Cognitive Grammar these mechanisms are invoked in the profiling of a relational content (a SoA as termed here) relative to the ground,[40] the current framework recruits three separate viewing arrangements in the selection of temporal locations, thoughts, and projections in three domains of anchoring.

The holistic conception of semantic contents also extends to the level of illocutionary acts. Although a simple sentence expresses only one message, speakers do not intend (and addressees do not understand) an explicitly conveyed message as an isolated piece of information. Messages are always meant and interpreted as connected to more global levels of discourse organization, which involve rhetoric relations, conversational goals, as well as non-linguistic intentions. These connections also underlie the mechanisms which make it possible for the speakers to 'mean' more than what they 'say' (e.g., by inducing Gricean conversational implicatures and performing indirect speech acts).

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[39] In Cognitive Grammar, as in the present framework, conceptual domains are taken as constituting networks of interconnected entities. The cognitive operation of *selection* determines which part of a network is being dealt with. A linguistic expression evokes a certain extent of conceptual content (called the *scope* of that expression) and focuses on a certain region in its scope (the *profile* of the expression; which is the entity or relationship designated by the expression). For example, the verb 'arrive' includes in its scope "an entity moving along a spatial path to a goal, but within that overall conception (its scope) it profiles only the final portion of the trajectory" (Langacker 2001: 5). The notion of *perspective* emphasizes the involvement of subjectivity in conceptualization and interpretation. A perspectival configuration minimally includes a 'subject of conception' or 'conceptualizer' (S), an 'object of conception' (O) and a 'viewpoint'. In an 'optimal viewing arrangement', O is construed in a maximally objective way (i.e., within the referential scene, or *onstage*) and S in a maximally subjective way (i.e., not as part of the referential scene, or *offstage*). The asymmetry between O and S is diminished in deictic expressions. For instance, the personal pronoun 'I' maximally objectifies S (the speaker), i.e., puts it onstage.

[40] The notions of scope and perspective and the distinction between subjective vs. objective construal underlies the account of grounding in Cognitive Grammar. The ground (G) constitutes the vantage point from which the profile (designated content) in an expression is construed in a highly (though not maximally) subjective way.

3.2 A perspective-based delimitation of entity qualifications

As mentioned in the beginning of Chapter 2, temporal, epistemic and volitional relations involved in an utterance are relative to cognitive states which serve as reference points in the respective domains or anchoring (namely, the current temporal state, the current knowledge state, and the current volitional state). For convenience, current states will henceforth be referred to as *centers* (i.e., *temporal center*, *epistemic center*, and *volitional center*).

Relative to the temporal center, a temporal location can be:

(i) anterior (preceding the reference time).

(ii) simultaneous (coinciding with the reference time) .

(iii) posterior (potentially following the reference time).

Relative to the epistemic center state, a thought can be:

(i) known (already taken for granted).

(ii) newly apprehended (not yet well-integrated).

(iii) hypothetical (merely unknown).

Relative to the volitional center, a projection can be:

(i) accepted (already taken as reflecting reality).[41]

(ii) created on the spot (reflecting speaker's immediate intentions).

(iii) envisioned (merely imagined rather than accepted as real).

These three main qualifications for each type of entity can be generalized as *actual*, *immediate*, and *potential* in relation to the relevant current state. As a fourth type of qualification, an entity can be *generic*, i.e., free from any specific relation to the current state. Figure 2 depicts the schematic delimitation of the *qualification space* which can be applied to each domain of anchoring.

[41] The term 'reality' is not used here as equivalent to epistemic terms such as 'certainty' or 'factuality'. A possibility, a probability, a guess, an inference or a conjecture can also be presented as real (i.e., as making part in the speaker's model of actual -rather than an imagined/envisioned- world). It should also be noted that 'reality' here is relative to the speaker.

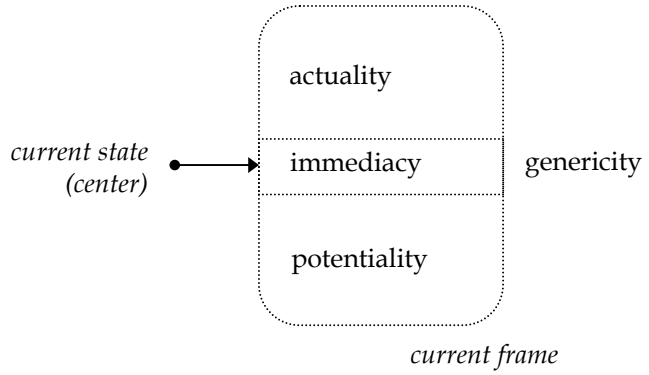

***Figure 2**. The schematic configuration of possible qualifications within each domain of anchoring.*

The union of regions which hold a specific relation to the center, i.e., the regions of actuality, immediacy, and potentiality, will be called a *frame*. Temporal, epistemic, and volitional frames basically correspond to domain-specific mental spaces.[42]

3.2.1 Frames and center displacements

When the current center in a domain is directly tied to the temporal perception, judgment or will of the speaker at the immediate communicative situation, it will be said to be *deictic*. The deictic temporal center is associated with the speaker's immediate temporal perception, the deictic epistemic center with her immediate judgment, and the deictic volitional center with her immediate will. A frame conceived around a deictic center will be called a *base frame*.

As already mentioned in Chapter 2, a center can be shifted to be associated with the cognitive faculties of (real or fictive) beings in (real or fictive) situations, or with those of the speaker as conceived in situations other than the communicative one. In such cases, what is at stake is a *(center) displacement*. When the center in a domain of anchoring is displaced, speech participants mutually construct a new frame around the new, displaced center. Such a frame will be called a *displaced frame*. The construction of a displaced frame corresponds to the building of a 'child space'

[42] A mental space (Fauconnier 1985, 2004; Fauconnier & Turner 1994, 1998; Sweetser & Fauconnier 1996) is a cognitive construct which defines a domain of referential structure in discourse. The 'base space' represents the conception of actual reality at the communicative situation. As discourse unfolds, 'child' mental spaces are created. At any point in discourse, speakers can move from one space to another (shift the 'viewpoint' space). Mental spaces are related to each other by 'connectors', which specify functions among entities across spaces. The 'accessibility' of a discourse referent at any point of the discourse is determined by the current hierarchical configuration of mental spaces, by what the viewpoint space is, and by the connectors that exist among mental spaces. A speaker can enrich, structure, and manipulate the contents of any mental space accessible from the viewpoint.

'Time-spaces' mentioned in Fauconnier (1985/1994: 29-30) constitute examples of temporal frames as conceived here. 'Hypothetical spaces' and 'wish-spaces' in Fauconnier (1985/1994: 31-33) can be seen as special types of epistemic and volitional frames respectively.

in mental space theory (e.g., Fauconnier 1985, Fauconnier & Sweetser 1996).[43] A displacement which occurs within the bounds of a single utterance will be called a *local displacement*. In English, local displacements can be triggered by 'when'-clauses, conditional protases, mental state predicates, and by sentence-initial temporal, epistemic, volitional, or illocutionary adverbs. *Discourse-level displacements* are those which reach beyond the immediate scope of a single utterance, taking effect in (sometimes very long) stretches of discourse.

A *temporal displacement* can be to a time point or a temporal range which is located in the past, in the future, or to a series of time points around the current temporal center (e.g., to repeater or 'habitual' occasions). In the English examples below, the sentence-initial temporal expressions (*tomorrow at five*, *when John arrived*, and *whenever I see her*) trigger local temporal displacements. The narrative segment in (3.5) illustrates a discourse-level temporal displacement: The expression *yesterday at eight* builds a temporal frame which is effective through all the three sentences:

(3.2) Tomorrow at five, I will have left.

(3.3) When John arrived, Mary had washed the dishes.

(3.4) Whenever I see her, she has to hurry up for something.

(3.5) Yesterday at eight, I left home. I was tired. I had not slept enough.

Local *epistemic displacements* can be illustrated with conditional sentences. A protasis triggers a displacement to a hypothetical, probable, unlikely, or counterfactual thought, so that the epistemic assessment expressed in the apodosis is not directly tied to the speaker's immediate judgment at the time of utterance. In (3.6) and (3.7) below, the protases build a 'hypothetical' and a 'counterfactual' epistemic frame, respectively, and the predictions in the apodoses are relative to these displaced frames. A local epistemic displacement is also involved when the speaker presents a belief, a guess, a conclusion, or an assumption from the perspective of other persons (3.8 and 3.9), or from her own perspective at a time different than the time of utterance (3.10). Discourse-level

[43] In mental space theory, a 'space builder' is a linguistic or non-linguistic element which establishes a child mental space (or one which refers back to an already existing one). For instance, the conditional protasis in (i) builds a 'counterfactual hypothetical space'. Similarly, the mental state verb *believe* in (ii) and the temporal expression *in 1929* in (iii) function as space-builders which establish, respectively, a 'belief space' and a 'time space':

(i) If I were a millionnaire, my VW would be a Rolls. (Fauconnier 1985/1994: 31)

(ii) Len believes that the girl with blue eyes has green eyes. (Fauconnier 1985/1994: 13-14)

(iii) In 1929, the president was a baby. (Fauconnier 1985/1994: 30)

A child space construed around a displaced center is a complex cognitive structure which can be wholly or partly different from the base frame. A great deal of background cognitive operations is apparently involved in the construction and structuring of new mental spaces, including 'blending' (e.g., Fauconnier & Turner 1994, 1998, Fauconnier 2004). Langacker's (1999) mechanism of departure from an 'actual plane' to a 'virtual plane' represents a similar kind of operation, in that it involves the mental detachment of reference points from the communicative situation (the 'ground').

epistemic displacements can be found in logical, mathematical, or argumentative discourse modes which involve chains of deductions on the basis assumed premises (3.11) (The anchoring relations in the main clauses in (3.9), (3.10) and (3.11) are still relative to the speaker's immediate cognitive states):

(3.6) If it rains, the match will be cancelled.

(3.7) If it had rained, the match would be cancelled.

(3.8) According to John, Marry may resign soon.

(3.9) Larry believes that Marry will resign soon.

(3.10) I was sure that Eve could not be guilty.

(3.11) Assume that *x* is equal to 4 …

A local *volitional displacement* is present in utterances which express a volitional relation relative to a willful agent other than the speaker as conceived in the communicative situation. Such displacements are most transparently visible in volitional attitude reports (here too, the main clauses entail deictic volitional relations) (3.12-3.14). A volitional displacement is also at stake when an utterance contains a message of a willful agent other than the speaker as conceived in the immediate communicative situation. Such displacements are involved in segments of reported speech (3.15) or indirect speech (3.16) (again, no volitional displacement is involved in the main clauses):

(3.12) Len wants to see you immediately.

(3.13) Sally regrets that she couldn't come.

(3.14) I was hoping that he was not lying.

(3.15) He said: "I have good news for you".

(3.16) John told me that he would be out of town for two weeks.

Discourse-level volitional displacements can be found in fictional discourse, including anonymous stories, tales and jokes.[44] The recognition of such discourse modes (which may be contextually inferred or explicitly indicated by a formulaic expression like *once upon a time*) makes it clear that what the speaker tells does not directly stem from her immediate will at the communicative situation. This is why a person who narrates a fictive story is not held responsible for the veracity of what she tells, and directive utterances which may appear within such narratives are not understood as urging the addressee(s) to take certain actions. The volitional center is

[44] In Deictic Shift Theory, such discourse stretches are seen as involving a 'shift' of the 'deictic center' (e.g., Segal 1995: 15).

displaced in a similar way in acting and imitation. In such discourse modes, some or all of the communicative settings (e.g., the speaker, the addressee(s), the place, the time, etc.) are construed differently from what they actually are, and the volitional center is aligned in the middle of the pretended communicative settings. 'Conditional' illocutionary acts involve a special type of volitional displacement, exploited by the speaker for specific communicative strategies. (3.17) is one of van der Auwera's (1986) examples of what he calls a 'conditional speech-act', and (3.18) is one example from Sweetser (1990) of what she calls a 'speech-act conditional'.[45] In both sentences, the protasis is presented as a condition for the making of an illocutionary act, rather than as a premise for the truth of the apodosis. In other words, the protasis builds a volitional frame in which an illocutionary act is formulated. A functionally similar strategy is to make an illocutionary act sound 'distant' (hence more tentative and polite), which is typically accomplished by the use of a past marker. (3.19) is an English example from Fleischman (1989) (who illustrates parallel phenomena in various other languages). It expresses an invitation in a volitional frame which is purported to be 'distant' from the immediate will of the speaker:

(3.17) If I can speak frankly, he doesn't have a chance. (van der Auwera 1986: 199)

(3.18) If it is not rude to ask, what made you decide to leave IBM? (Sweetser 1990: 118)

(3.19) I thought/was thinking about asking you to dinner. (Fleischman 1989: 8)

Displacements in different domains can be triggered independently of each other. For instance, when a speaker recounts a series of actually experienced events, the temporal center is displaced to the past, while the epistemic and the volitional centers remain deictic. Or, while the epistemic center is always displaced in the apodosis of a counterfactual conditional, the temporal relation can be deictic. Displacements in more than one domain can also coexist in the same discourse segment. For instance, for the sake of an argument, a lawyer can form a hypothetical or counterfactual account of past events, evoking both a temporal and an epistemic displacement. Anonymous tales about fantastic worlds in the past typically involve displacements in all three domains of anchoring. Lastly, it is possible to trigger a further displacement from an already displaced temporal, epistemic, or volitional frame. Examples include 'flashbacks' in past narratives and chains of assumptions in logical or argumentative discourse.

3.2.2 Anaphoric anchoring

Utterances which appear in the scope of a discourse-level displacement will be called *dependent utterances.* Dependent utterances receive part of their anchoring relations anaphorically from a

[45] Sweetser (1990: 120) defines speech-act conditionals as including "all cases where the performance of the in-process speech act (the apodosis) is presented as being conditional on some factor expressed in the protasis".

discursively displaced center.[46] Consider the following discourse stretch. The utterances in (3.20b) and (3.20c) are temporally dependent, because one needs to refer back to the displaced temporal center for a full identification of the temporal relations they are associated with. In other words, they anaphorically refer to the temporal center initially set in (3.20a).

(3.20) (a) John left home at six. (b) It was raining. (c) He was going to take the tram.

Similarly, (3.21b) is an epistemically dependent sentence. The past morphology in *would* serves as an indication of the anaphoric reference to the hypothetical thought introduced by the displacement triggered in (3.21a):

(3.21) (a) Assume that John is the thief. (b) Where would he hide the money?

The sentences in (3.22b), (3.23b) and (3.23c) are volitionally dependent. They are anaphorically associated with the volitional displacements which accompany illocutionary indirections triggered by the formulaic expression *once upon a time* in (3.22a), and by the illocutionary predicate *shout* in (3.23a):

(3.22) (a) Once upon a time, there lived a little girl in a small village. (b) One day she went to the forest.

(3.23) (a) John shouted: (b) Get out! (c) I don't want to see you here!

Dependent clauses are functionally similar to dependent sentences. They involve an anaphoric reference to a displaced center introduced in another (typically preceding) phrase or clause in the same sentence. For example, the second clause in (3.24) is temporally dependent, because it refers back to the temporal center introduced in the 'when'-clause. Similarly, the apodosis in (3.25) is epistemically dependent, because it refers back to the 'unlikely' thought introduced in the protasis:

(3.24) When John came, we were playing cards.

(3.25) If John came tonight, we would play cards.

Anchoring relations are by definition *relative*, in that they specify qualifications with reference to centers in the relevant domains. A temporal, epistemic, or volitional relation will be said to be deictic only when it is which is relative to a deictic center. In other words, an anchoring relation indexed in a dependent sentence or a dependent utterance is not deictic, but just relative. Below are some examples. The temporal relation 'past' in (3.26) is relative to the time of utterance (speaker's

[46] 'Dependency' as used in this context does not include referential (anaphoric) dependency in nominal elements (e.g., as involved in pronouns). The idea of anaphoric reference in the domain of time can be found in a number of previous studies (e.g., 'anaphoric tenses' mentioned in Partee 1973, 1984; Kamp & Rohrer 1983; Webber 1988; Vet 1996; Janssen 1996, 2002; de Mulder & Vetters 2002, among others). Anaphoric time reference has also been proposed to be present in background segments of narratives (e.g., Nakhimovsky 1988, Thelin 1990, Smith 2003). The current framework extends the mechanism of anaphoric time reference to the epistemic and volitional domains.

'now'), hence is deictic. The same temporal relation appears in (3.27) relative to temporal center displaced to future, hence is not deictic. Similarly, the 'prediction' involved in (3.28) is deictic, because it is relative to the speaker's immediate knowledge state. But in (3.29), the prediction is presented from John's point of view, hence is not deictic. The prediction in (3.30) too, though linked to speaker's judgment, is not deictic, since the conditional protasis cognitively displaces the epistemic center away from the communicative situation. Lastly, the sentences in (3.31) and (3.33) illustrate deictic uses of the volitional relations 'hope' and 'assertion', because they are directly tied to the speaker's immediate will. But in (3.32) and (3.34), the same relations are used in a non-deictic way, because they are relative to a displaced volitional state (one which is tied to Len's will):

(3.26) She received the mail.

(3.27) Tomorrow at six, she will have received the mail.

(3.28) (I think) Jane will not resign.

(3.29) John thinks that Jane will not resign.

(3.30) If they force Jane, she will not resign.

(3.31) I hope the document comes in time.

(3.32) Len hopes that the document comes in time.

(3.33) John is happy.

(3.34) Len says that John is happy.

3.3 Signaling vs. designation of anchoring relations

Anchoring relations are often offstage semantic components, e.g., when they are expressed in the form of grammatical 'grounding predications'. But they can also appear onstage, i.e., can make part of a designated relational content (SoAs) in a clause. What Brisard (2002a) says for the 'meanings expressed by grounding predications' straightforwardly applies to anchoring relations:

> Of course, it is possible to thematize, as it were, the meanings expressed by grounding predications, but then such a process would need to convert the background character of this information into something foregrounded, or 'objective' status […] (Brisard 2002a: xxv).

An anchoring relation will be said to be *designated* when it appears onstage, i.e., as part of an explicitly designated predicate. It will be said to be *signaled* when it appears offstage (with or without specifications, e.g., by adverbial elements).

In English, anchoring relations are typically signaled by grammatical strategies, with optional specifications by adverbial elements.[47] But a designated anchoring relation typically appears in the form of an epistemic, volitional or illocutionary predicate. The primary semantic argument of this predicate corresponds to the 'source' of the relation (i.e., the cognitive agent(s) with which the epistemic or volitional center is associated), and its secondary argument (the complement of the predicate) expresses a semantic content (a proposition, a reflection, or a message) in the form of a subordinate clause. Simply stated, the designation of an anchoring relation yields a complex sentence with a subordinate clause. Below are two examples. The pairs express similar anchoring relations, i.e., 'weak epistemic possibility' in (3.35) and (3.36), and 'wish' in (3.37) and (3.38). While (3.35) and (3.37) signal these relations with the auxiliary *might* and the inverted auxiliary *may*, (3.36) and (3.38) designate them with the mental state predicates *suspect* and *hope*:

(3.35) She might be lying.

(3.36) I suspect that she is lying.

(3.37) May they live happily!

(3.38) I wish they live happily.

A designated anchoring relation can also be presented relative to an 'impersonal' (or, 'objective') point of view. In such cases, English typically uses the pronoun *it* with an epistemic or volitional predicate, which can be a verb (as in 3.39) or an adjective (as in 3.40 and 3.41):

(3.39) It appears as if she is sleeping.

(3.40) It is likely/possible that he received the mail.

(3.41) It is desirable/favorable that she signs the contract.

Temporal relations are not too often designated in English. Still, examples like (3.42) can be found, where a relation of anteriority is designated by the predicate 'in 1990'. Similarly, (3.43) designates simultaneity with 'now' and (3.44) designates a non-deictic relation of posteriority with 'two days later':

(3.42) It was in 1990 that I saw him.

(3.43) It is only now that she has a car.

(3.44) It was two days later that he came back.

[47] The difference between designation and signaling of anchoring relations is basically a semantic difference which concerns the degree of explicitness in reference. Hence, it should not strictly be associated with grammatical vs. lexical expression in an a priori way. In deciding whether an anchoring relation is designated or signaled in an utterance, one needs to take into account the alternative strategies provided by the language under investigation for expressing that relation.

An utterance can also designate an illocutionary act. Illocutionary predicates which appear in such utterances always entail a volitional relation, because every illocutionary act reflects a volitional attitude of the speaker. For instance, the verbs which describe illocutionary acts in (3.45) entail the volitional relation 'want'. An illocutionary predicate can also entail an epistemic relation. For instance, the verbs in (3.46) all entail 'certainty' in addition to 'acceptance':

(3.45) He ordered/asked/requested/pleaded him to leave.

(3.46) They affirmed/confirmed/acknowledged that it was a mistake.

The explicit designation of an illocutionary act in the first person present yields an 'explicit performative' (Austin 1962: 32-33, Searle 1989). Some examples are given below:

(3.47) I order you to leave!

(3.48) I apologize for having disturbed you.

(3.49) I declare the meeting cancelled.

(3.50) I argue that the results are not reliable.

(3.51) I admit that there was a calculation error.

Whether or not a sentence contains a designated anchoring relation, its main clause always signals the three layers of anchoring relations. For instance, (3.52) designates the epistemic predicate 'assume', and signals 'past', 'certainty' and 'assertion' in its main clause. The main clause of (3.53), which designates a volitional predicate ('wish'), signals 'present', 'certainty' and 'assertion'. In the same vein, (3.54) designates the epistemic predicate 'suspect', and signals 'present', 'epistemic possibility' and 'assertion' in its main clause. Lastly, (3.55), which designates the illocutionary predicate 'ask' (which entails the volitional relation 'want'), can be analyzed as signaling 'future', 'hypothetical', and 'order' in its main clause:

(3.52) John assumed that we could meet Mary tomorrow.

(3.53) Larry wishes to see Mary.

(3.54) Len may be suspecting that Jane has left.

(3.55) Ask Jane to leave immediately.

The designation of an anchoring relation may or may not be accompanied by a center displacement. For instance, all the sentences below involve designated anchoring relations. While the subordinated clauses in (3.56) and (3.57) involve displaced centers, those in (3.58) and (3.59) involve deictic centers:

(3.56) John believes that Mary is wrong.

(3.57) John orders you to go.

(3.58) I believe that Mary is wrong.

(3.59) I order you to go!

3.4 Summary

This chapter defined *temporal locations*, *thoughts* and *projections* as three types of higher-order entities in the three domains of anchoring, and identified their contents as *SoAs*, *propositions*, and *reflections*. It derived the hierarchical ranking of temporal, epistemic and volitional relations from the properties of containment of these higher-order entities, and showed how linguistically expressed semantic contents are linked to background cognitive structures. It then delimited the semantic space in each domain of anchoring in terms of the qualifications of higher-order entities as *actual*, *immediate* or *potential* relative to (or as bearing no specific relation to) the *centers* (reference cognitive states). Centers which are directly tied to the communicative situation (i.e., to the 'ground') were identified as *deictic*, and those associated with other situations, as *displaced* centers. The chapter also presented an account of anaphoric TAM reference in each of the three domains of anchoring, and finally, emphasized the difference between signaling an anchoring relation (e.g., by a grammatical TAM strategy) and designating it (e.g., by a mental state predicate).

The following chapter defines and labels semantic categories in the three domains of anchoring, on the basis of isomorphic perspectival configurations introduced in this chapter. It than expands on formal strategies for anchoring categories and on how volitional anchoring categories relate to speaker's immediate intentions in making an illocutionary act.

Chapter 4

The basic anchoring categories

This chapter defines and labels the basic anchoring categories on the semantic space of anchoring, in terms of relative qualifications of higher-order entities introduced in the previous chapter.

4.1 Defining the basic anchoring categories in terms of higher-order entities

Figure 3 on the next page shows the labels for the *basic anchoring categories* on the semantic space of anchoring. Seven categories are delimited on the basis of isomorphic perspectival configurations in each of the three domains of anchoring. In what follows in this section, these categories will be defined in terms of higher-order entities (i.e., temporal locations, thoughts, and projections). (Since the definitions of these categories in this section are schematic and rather technical, how they make sense in the context of actual utterances may not be immediately evident. Their detailed, usage-based characterizations will follow in Chapter 5, where they will also be illustrated with grammatical markers across languages.) All of the basic anchoring categories defined in this chapter can also combine with negation, which will be introduced into the metalanguage of anchoring categories in Chapter 6.

4.1.1 The categories of immediacy

The categories of immediacy are SIMULTANEOUS, NEW INFORMATION, and IMMEDIATE CONTRIBUTION. They involve higher-order entities qualified as 'immediately present' at the centers in their respective domains:

- SIMULTANEOUS selects the temporal location which coincides with the reference time.
- NEW INFORMATION selects the thought which is currently in-process.
- IMMEDIATE CONTRIBUTION selects the projection which is created on the spot by virtue of the immediate act of utterance.

The semantic contents associated with categories of immediacy are defined as follows:

- The contents of a temporal location qualified as SIMULTANEOUS (i.e., the SoAs in it) amount to *immediate conditions*.
- The contents of a thought qualified as NEW INFORMATION (i.e., the propositions in it) amount to *immediate evidence*.
- The contents of a projection qualified as IMMEDIATE CONTRIBUTION (i.e., the reflections in it) amount to *immediate intentions*.

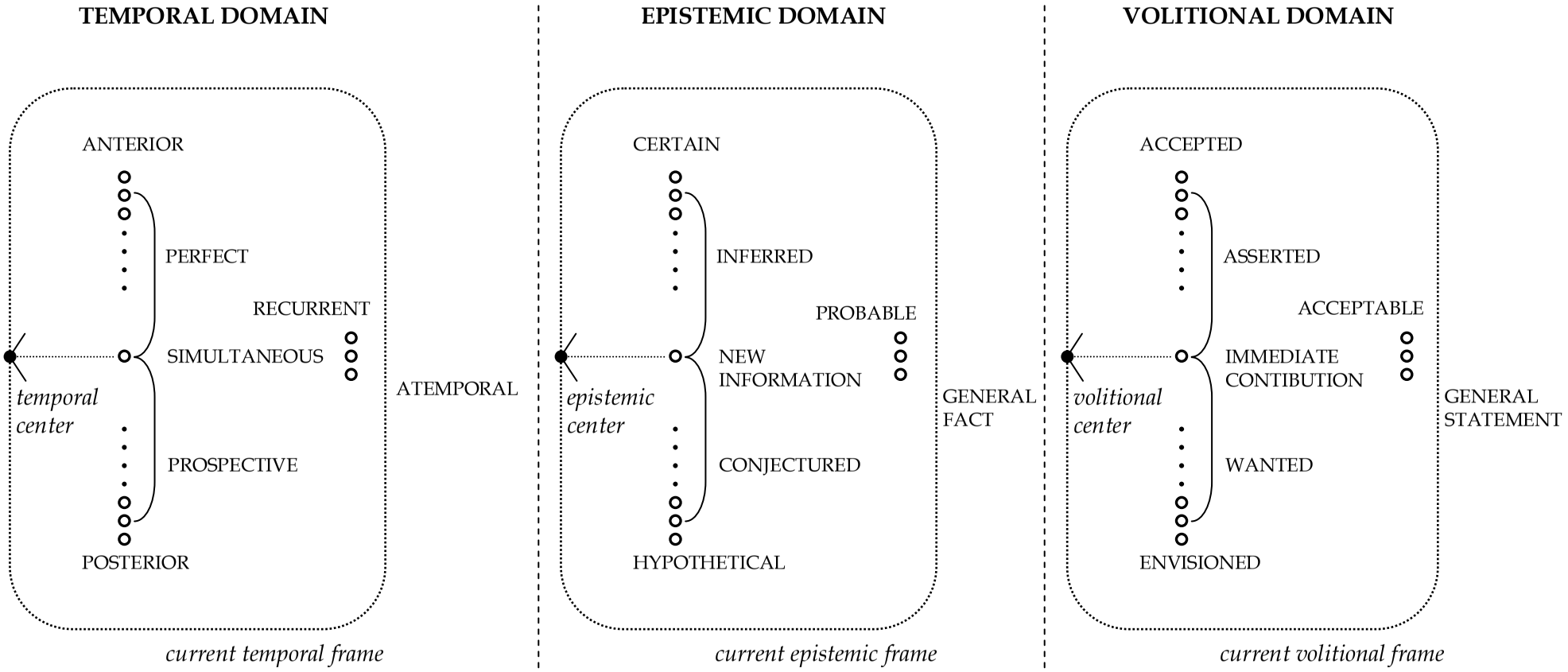

***Figure 3**. The basic anchoring categories defined in relation to the (deictic or displaced) centers in the three domains of anchoring.(A circle denotes a higher-order entity: a temporal location, a thought, or a projection.)*

4.1.2 The categories of actuality

The *categories of actuality* are ANTERIOR, CERTAIN, and ACCEPTED. They involve higher-order entities qualified as already 'actualized' from the perspective of the centers in their respective domains:

- ANTERIOR selects a temporal location or a temporal range qualified as past.
- CERTAIN selects a thought which is surely known to be true.
- ACCEPTED selects a projection which is taken as being part of the established reality.

4.1.3 The categories of potentiality

The *categories of potentiality* are POSTERIOR, HYPOTHETICAL, and ENVISIONED. They involve higher-order entities qualified as 'non-actual' (or, 'irrealis') from the perspective of the centers in their respective domains:

- POSTERIOR selects a temporal location or range qualified as future.
- HYPOTHETICAL selects a thought qualified as merely unknown.
- ENVISIONED selects a merely imagined projection.

4.1.4 The categories of quantification

The *categories of quantification* are RECURRENT, PROBABLE, and ACCEPTABLE. They specify a quantificational value over a range of higher-order entities construed around the center in the respective domain. Hence, they are inherently scalar:

- RECURRENT quantifies over a temporal range 'close to' the temporal center.
- PROBABLE quantifies over a range of thoughts 'close to' the epistemic center (current knowledge state).
- ACCEPTABLE quantifies over a range of projections 'close to' the current volitional state.

4.1.5 The categories of generality

The *categories of generality* are ATEMPORAL, GENERAL FACT, and GENERAL STATEMENT. They involve generic higher-order entities. They express the occurrence of a SoA, the truth of a proposition, or the recognition of a reflection as not contingent to (i.e., as holding no specific relation to) the current cognitive states (centers) in their respective domains:

- ATEMPORAL selects a generic temporal location.
- GENERAL FACT selects a generic thought.

- GENERAL STATEMENT selects a generic projection.

4.1.6 The categories of relevance

The *categories of relevance* are categories which combine a category of immediacy with either a category of actuality or one of potentiality. As such, they establish a causal, a logical, or an intentional relevance to the current (deictic or displaced) cognitive states.

In the temporal domain,

- PERFECT combines ANTERIOR and SIMULTANEOUS, establishing a causal relation between the contents of the two. It expresses both a past SoA (the content of ANTERIOR) and an immediate condition (the content of SIMULTANEOUS), conceived as a 'result' of the past occurrence.
- PROSPECTIVE combines POSTERIOR and SIMULTANEOUS, establishing a causal relation between the contents of the two. It expresses both a future SoA (the content of POSTERIOR) and an immediate condition (the content of SIMULTANEOUS), conceived as a 'cause' for the potential occurrence.

In the epistemic domain,

- INFERRED combines CERTAIN and NEW INFORMATION, establishing a logical relation between the contents of the two. It expresses a definitive conclusion (the content of CERTAIN) along with a piece of immediate evidence (the content of NEW INFORMATION) which is conceived as a 'proof' for the conclusion.
- CONJECTURED combines HYPOTHETICAL and NEW INFORMATION, establishing a logical relation between the contents of the two. It expresses a non-definitive conclusion (the content of HYPOTHETICAL) along with a piece of immediate evidence (the content of NEW INFORMATION) which is conceived as a 'sign' for the conclusion.

In the volitional domain,

- ASSERTED combines ACCEPTED and IMMEDIATE CONTRIBUTION, establishing an intentional relation between the contents of the two. It expresses a reflection taken as real (the content of ACCEPTED) along with an immediate intention of the speaker (the content of IMMEDIATE CONTRIBUTION).
- WANTED combines ENVISIONED and IMMEDIATE CONTRIBUTION, establishing an intentional relation between the contents of the two. It expresses a reflection that the speaker wants to be real (the content of ENVISIONED) along with an immediate intention of the speaker (the content of IMMEDIATE CONTRIBUTION).

4.2 Finer distinctions and additional dimensions as 'specifications'

The 21 basic anchoring categories defined above exhaust the space of possible relations in the three domains of anchoring. However, since they are schematically (hence vaguely) defined, anchoring relations conveyed in actual utterances are often more specific. For instance, past events are rarely presented as just ANTERIOR; the time of occurrence is generally specified with much more precision. An inferential utterance (i.e., one which expresses INFERRED) may specify not only the existence, but also the perceptual type of available evidence. Different directive utterances (e.g., requests, orders, obligations, advices, etc.) can all be analyzed as expressing WANTED, but they may signal different degrees of strength of the speaker's desire, and may additionally index differences in social status, a concern for the willingness of the addressee(s), etc. Even culture-specific semantic dimensions can be conveyed in directive utterances, which play an important role in regulating social relations. I will use the term *specification* to refer to semantic dimensions and distinctions which are more specific or more fine-grained than what is included in the characterizations of the basic anchoring categories. Specifications can be conveyed as part of conventional meanings of grammatical markers, or expressed by lexical strategies such as adverbials.

When necessary, specifications will be represented with descriptive labels given between slash signs (/). Below are some examples with grammatical expressions of anchoring categories. Both (4.1) and (4.2) express ANTERIOR, but with different specifications. Similarly, (4.3), (4.4) and (4.5) all fit the schematic definition of PERFECT; various subtypes of this general category are indicated as specifications. (4.6), (4.7) and (4.8) are all schematically analyzed as entailing PROBABLE, but they convey different degrees probability. In the same vein, the expression of wish, the request, the obligation, and the order in (4.9) to (4.12) all fit the schematic definition of WANTED (in that they all convey speaker's wish or desire for a projection to be realized). One can always go into deeper analyses of such specifications as to their exact semantic composition, but the level of detail set by the definitions of the basic anchoring categories will be sufficient for the analytic goals of this dissertation:

(4.1) He came yesterday. (ANTERIOR/yesterday/)

(4.2) He came two hours ago. (ANTERIOR/two hours ago/)

(4.3) John has lost his keys. (PERFECT/result/)

(4.4) I have read this book. (PERFECT/experience/)

(4.5) The bus has just arrived. (PERFECT/recent/)

(4.6) He might be working now. (PROBABLE/low/)

(4.7) He may be working now. (PROBABLE/medium/)

(4.8) He will be working now. (PROBABLE/high/)

(4.9) I wish I had the keys. (WANTED/wish/)

(4.10) Can you give me the keys please? (WANTED/request/)

(4.11) You have to give me the keys! (WANTED/obligation/)

(4.12) Give me the keys! (WANTED/order/)

4.3 Anchoring categories at the level of illocutionary act

4.3.1 A communicative constraint on the expression of volitional categories

In personal communication,[48] every utterance transmits the speaker's intentions at the immediate communicative context.[49] In other words, the following constraint holds:

(4.13) Every utterance in personal communication necessarily expresses the speaker's immediate intentions.

This constraint can be seen as a specific manifestation of Grice's Maxim of Relation (which simply reads as 'be relevant'; see Grice 1975: 308),[50] because it actually expresses the necessity of a personal utterance to establish 'relevance' to the speaker's immediate volitional state. More specifically, it can be seen as a manifestation of Sperber & Wilson's (1986) Principle of Relevance, which basically says that "communicated information comes with a guarantee of relevance" (Sperber & Wilson 1987: 82):[51]

This constraint predicts that the final layer in the anchoring of a main clause (finite utterance) must be either IMMEDIATE CONTRIBUTION (which is defined as reflecting the speaker's immediate intentions), or one of the two volitional relevance categories, namely, ASSERTED and WANTED (which, by definition, entail IMMEDIATE CONTRIBUTION). ACCEPTED, ENVISIONED and ACCEPTABLE cannot be signaled on their own in a main clause, because they do not convey the speaker's immediate intentions. Statements which express GENERAL STATEMENT are exempt from this constraint, because they present a message from an impersonal point of view (i.e., without

[48] The phrase 'personal communication' here refers to communicative contexts in which the speaker 'speaks for herself' in order to create specific cognitive effects in the addressee(s) in accordance to her own communicative goals. It hence excludes official or institutional statements like public announcements, laws, regulations, reports, be they in the written form or voiced by spokesmen.

[49] The role of intentions in linguistic communication has been emphasized most notably in the work of Grice (1957, 1965, 1975) and his followers.

[50] Grice's (1975) Maxim of Relation is one of his four conversational maxims which constitute the Principle of Cooperation: "Make your conversational contribution such as is required, at the state which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged" (Grice 1975: 307).

[51] Sperber & Wilson's (1986) Relevance Theory aims to account for the context-sensitive aspects of communication, including reference assignment, disambiguation and implicatures, on the basis of a single Principle of Relevance, which is intended to subsume Grice's (1975) four conversational maxims.

signaling any contingent relation to the speaker's immediate will). The consequences of this constraint on the expression of volitional anchoring categories will be further explored in the next chapter, where the basic anchoring categories are elaborately characterized and illustrated.

4.3.2 Immediate intentions as illocutionary intentions

In section 4.1.1, immediate intentions were defined as the contents of the projection created on the spot by virtue of the speaker's act of utterance. The immediate intention of a speaker in making an utterance is simply an intention to carry out a specific illocutionary act. This act may consist of making a remark, raising an objection, making a claim, issuing an order, making a promise, declaring war, giving apologies, or another one of the numerous illocutionary acts, some which are cited and classified in Austin (1962: 150-163) and in Searle (1975a). Simply stated, *immediate intentions are equivalent to illocutionary intentions*.[52] Hence, a description of speaker's immediate intentions in making an utterance is a description of the illocutionary act she intends to perform.

4.3.3 The emergence of the illocutionary force

In the current framework, the illocutionary force of an utterance is not taken as part of its convention-bound meaning (semantic value). 'Force', as an action-theoretic notion, emerges from the recovery of the speaker's immediate intention in particular communicative contexts.[53] The semantic value of an utterance does not completely determine its illocutionary force, although it may directly reflect the speaker's immediate intention or firmly guide its inference. Although all of the components of the semantic value (SoA-internal, temporal, epistemic, and volitional) contribute to the transmission of the speaker's immediate intention (hence, to the recovery of the illocutionary force), the most operative semantic component in this process is the volitional relation signaled in the main clause of an utterance.[54]

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[52] As such, perlocutionary goals, conversational implicatures, and indirect illocutions are excluded from what is referred to here as 'immediate intentions'. One specific kind of intention which is central in Grice's (1957, 1968, 1975) work, namely, the 'communicative intention', should not be confused with what is referred to here as 'immediate intentions'. The recognition of the speaker's self-reflexive communicative intention provides the basis for the recovery of the speaker's immediate intentions.

[53] The need for separating the actional notion of 'force' from the representational notion of 'meaning' has been argued for by a number of philosophers (e.g., Stenius 1967; Davidson 1979), as well as linguists and pragmaticians who emphasized the inferential aspects of communication (e.g., Bach & Harnish 1979; Leech 1983: 30-35; Wilson & Sperber 1988, and Bach 2005). This position is opposed to that of Searle (1969, 1975a) and Searle & Vanderveken (1985), who take illocutionary force as part of the sentence meaning and locate it at the same level of representation as that of the propositional content (as reflected in the formula *F(P),* where *P* denotes the 'propositional content' and *F* the 'illocutionary force' of an utterance). See also Wierzbicka (1998) for a Searlian view of illocutionary force.

[54] A similar position is defended in Bach & Harnish (1979), who relate the illocutionary force to the expression of speaker's 'attitudes' (see also Bach 2005). Wilson & Sperber (1988) propose to analyze 'non-declarative moods' in a similar way, i.e., as entailing a component of 'desirability'.

4.4 Anchoring categories and considerations of form

4.4.1 Strategies of expression for anchoring categories

Anchoring categories are defined in purely semantic terms and conceived independently of particular strategies of expression. They can be expressed by lexical, grammatical, or semi-grammatical strategies, which may involve, e.g., bound inflectional morphemes, stem changes, clitics, particles, auxiliary verbs, predicatively used adjectives, lexical or complex adverbials, mental state verbs, intonational units, specific syntactic constructions, a combination of these, or zero-marking. Languages vary as to their resources for encoding (signaled or designated) anchoring categories. A temporal category like 'future' or an evidential category like 'inference' can be associated with grammatical strategies in one language, and only with lexical strategies in another. Similarly, a question or an exclamation can be expressed by a particle in one language, and signaled exclusively by distinctive prosodic contours in the next one. More than one strategy may also contrast within a language in conveying the same anchoring category. For instance, in English, a high degree of likelihood can be expressed by an adverb like *probably*, with an auxiliary like *must*, or with a copular sentence with the adjectival predicate *likely*.[55] Similarly, a command can be issued by an imperative form like *Go!* or by an explicit performative like *I order you to go!*. In such cases, the speaker's choice among alternative strategies correlates with whether the category is 'onstage' (designated) or 'offstage' (signaled), and with its intended degree of specificity.

Although grammaticality is not part of the definitions of the 21 anchoring categories defined above, they largely exhibit the hallmarks of grammatical meaning mentioned in Bybee, Perkins & Pagliuca (1994: 4-8): They exhibit semantic generality (because they are defined in a schematic way), they are highly dependent in meaning (because they are interpreted relative to cognitive states which make part of the communicative context), they have fixed scope (due to the hierarchical organization of the semantic value), and they are very frequently used (because one category from each domain is signaled in each utterance). Indeed, these anchoring categories are typically expressed by grammatical TAM markers (including zero-marking) and optionally specified by lexical strategies (adverbials).[56]

[55] See Nuyts (2001a), who investigates the factors which affect speakers' choices among alternative strategies in the expression of epistemic modality in Dutch, German, and English.

[56] Although grammatical markers (e.g., inflectional TAM markers) are normally more general in meaning compared to lexical items (e.g., mental state predicates or adverbs), they can still express very specific meanings. Some languages have developed elaborate grammatical paradigms for highly fine-grained anchoring relations, for instance, tense systems with remoteness distinctions (Dahl 1985: 120-128), or elaborate paradigms for source of evidence (Palmer 2001: 35-47).

4.4.2 Conventional implication in the grammatical expression of categories of relevance

Categories of relevance (PERFECT, PROSPECTIVE, INFERENCE, CONJECTURE, ASSERTED and WANTED) were defined in section 4.1.6 as compound categories which express an immediate content along with an actual or a non-actual content. When a category of relevance is signaled in a main clause by a grammatical strategy, the content of the actual or non-actual category is explicitly given, while the immediate content is only conventionally implied. This is illustrated below with three categories of relevance (PERFECT, INFERRED, and ASSERTED).

When PERFECT is signaled (e.g., by a grammatical marker or by zero-marking), the content of the ANTERIOR temporal location or range (i.e., a past SoA) is explicitly conveyed, while the contents of the SIMULTANEOUS temporal location (i.e., immediate conditions, conceived as the 'results' of the past occurrence) remain implicit. In other words, although a 'perfect' sentence is about the temporal center (i.e., the reference time, which is the 'present time' if no temporal displacement is involved), the SoA it designates is one which happened in the past. For instance, in the following English example, the explicitly conveyed SoA ('the speaker eating lunch') is one which happened in the past, while its present results (e.g., the speaker not being hungry, she not wanting join the addressee for lunch, etc.) are only conventionally implied:

(4.14) I have eaten lunch.

An utterance which signals INFERRED (e.g., by a grammatical marker or by zero-marking), explicitly conveys the content of a CERTAIN thought (i.e., a definitive conclusion), while it only implies the contents of NEW INFORMATION (i.e., immediate evidence, conceived as the 'proofs' for the conclusion). Just as immediate conditions (SoAs which hold at the reference time) are not explicitly given in PERFECT, so is the case for immediate evidence in INFERRED. For instance, in the Tucano (Tocanoan) inferential sentence below (from Aikhenvald 2004), what is explicitly given is the proposition inferred to be true by the speaker (i.e., the conclusion). The evidence (e.g., "the fish is gone, there are bones scattered around, and the dog looks happy and satisfied" (Aikhenvald 2004: 52)) is not explicitly communicated: The inferential marker *-ápĩ* only conventionally implies that such evidence exist in the immediate context:

(4.15) diâyɨ wa'îre yaha-**ápĩ**.
dog fish-TOP.NON.A/S steal-REC.P.INFR.3sgnf
'The dog stole the fish.' (I inferred it)

In the same vein, when ASSERTED is signaled in an utterance (e.g., by a grammatical marker or by zero-marking), what is explicitly voiced is the content of an ACCEPTED projection (i.e., the reflection accepted as real); the contents of IMMEDIATE CONTRIBUTION (i.e., the speaker's

immediate/illocutionary intentions) remain implicit. For instance, in the following assertive utterance from English (where assertion is morphosyntactically unmarked), the reflection accepted as real by the speaker (i.e., 'that John is not happy') is explicitly conveyed, while the speaker's illocutionary intention (e.g., whether she 'suggests', 'claims', 'admits', 'insists', etc. that John is not happy) is implicit (hence should be recovered from the utterance context):

(4.16) John is not happy.

This limitation in the (grammatical) signaling of categories of relevance is presumably tied to the restriction for human language to express at most one SoA, at most one proposition, at most one reflection, and at most one message per clause (see section 3.1.3).

4.4.3 Form-meaning mappings in the grammatical expression of anchoring categories

The grammatical resources of a language can be seen to be shaped by the interaction of two opposing functional motives: *economy* and *expressivity* (or, 'iconicity' as called in Croft 2003: 101-102). Economy forces languages to employ minimal formal resources for expressing a maximal range of meanings. Conversely, expressivity pushes for more alternative strategies and more combinatory possibilities to allow its speakers express semantic distinctions at the intended level of specificity.

Under the pressure of expressivity, a certain anchoring category can be conveyed by a number of different grammatical strategies. The choice among available alternatives may be sensitive to various factors, including interactions with other anchoring categories, person, gender, number, transitivity, information structure, etc. Economy has a number of consequences in grammar. One of its manifestations is *zero-marking*, i.e., the expression of a semantic category without overt grammatical marking.[57] This is the case, for instance, in the expression of CERTAIN and ASSERTED in English (as well as in many other languages). Second, a TAM marker can *cumulatively express* more than one anchoring category in a specific use (behaving as a so-called 'portmanteau' morpheme). For example, the predictive use of the English auxiliary *will* (e.g., in conditional apodoses) involves both 'future' (POSTERIOR) and 'epistemic modality' (PROBABLE). Third, TAM markers are typically *polysemous*, i.e., conventionally associated with more than one distinct (though related) use. For

[57] The lack of an overt grammatical marking for a TAM category (as well as any other inflectional category) is most typical in morphologically isolating languages such as Vietnamese or Chinese. In general, zero-marking is facilitated by the strongly context-dependent nature of TAM meanings, which makes an explicit marking redundant in most contexts:

> The high frequency of grams is in part due to their semantic generality, which allows them to occur in a wide range of contexts, but it is also due to the use of the grams in environments where their contribution is actually redundant. That is, grams come to be used not just where the meanings they supply are strictly necessary, but also any time that meaning is compatible with the general context and the speaker's intentions (Bybee, Perkins & Pagliuca 1994: 8).

instance, the auxiliary *must* in English has at least three distinct uses (identified as 'participant-internal necessity', 'epistemic necessity', and 'deontic necessity' in van der Auwera & Plungian 1998). When at least two conventional uses of a marker are very close to each other, polysemy can appear as vagueness. For instance, the English *have…en/ed* strategy covers all three of 'perfect of result', 'perfect of recent past', and 'perfect of experience'. Similarly, the second person imperative strategy (bare verbal stem) can be used in both orders and advices. Zero-marking, cumulative expression and polysemy pervade TAM systems of the world's languages: They typically possess much fewer TAM markers than what full transparency in semantic composition and paradigmatic differentiation would require.

4.5 Summary

This chapter defined 21 *basic anchoring categories* in terms of relational qualifications of higher-order entities in each domain of anchoring. In each domain, it delimited one category of *immediacy,* one of *actuality*, one of *potentiality*, one of *quantification*, one of *genericity* as well as two categories of *relevance*. It then introduced a communicative constraint on the appearence of volitional categories in the final layer of anchoring in a main clause: Every utterance in personal communication necessarily establishes an intentional relevance to the speaker's immediate volitional state (i.e., expresses IMMEDIATE CONTRIBUTION, either directly or as part of ASSERTED and WANTED). Finally, it mentioned various modes of formal expression for anchoring categories and pointed to the pervasiveness of zero-marking, cumulative expression and polysemy in their grammatical marking.

In the next chapter, the anchoring categories defined here are characterized in more usage-based terms and illustrated with data from English and other languages.

Chapter 5

Cross-linguistic illustrations of basic anchoring categories

This chapter characterizes the 21 basic anchoring categories defined in Chapter 4 in terms of their uses in actual communicative contexts and illustrates them with examples from English and other languages.

Since the seven basic anchoring categories defined in each domain of anchoring are paradigmatic and mutually exclusive, each of the given examples will match one and only one category in each domain. However, since the basic anchoring categories are defined in a broad way, they will generally underspecify the temporal, epistemic or volitional relation actually expressed in an example. When necessary, semantic dimensions which go beyond the schematic definitions of the basic anchoring categories will be represented as 'specifications' (see section 4.2).

Although anchoring categories can be expressed by grammatical as well as lexical strategies, the examples will mainly illustrate grammatical TAM markers. For some of the examples, a minimal utterance context will be specified in order to clarify what the utterance under question is actually meant to convey. This will be necessary for two main reasons. First, anchoring relations are, by definition, context-dependent (i.e., relative to cognitive states defined in the communicative background) and may index various elements in the communicative context. Second, due to the pervasiveness of polysemy in TAM markers (see section 1.4.6), anchoring categories are not always associated with distinctive grammatical markers.

When semantically analyzing an utterance in actual communication, one first needs to make sure that (s)he has correctly understood what the speaker actually intended to convey by means of conventional devices available in her langauge (i.e., the full semantic value of the utterance; see section 1.4.2). But polysemy in the grammatical marking of TAM can make it difficult to pinpoint which anchoring category is at stake in a given sentence, especially if one does not have access to the utterance context. For instance, it may be difficult to judge whether a sentence involves CONJECTURED (evidential uncertainty) or PROBABLE (epistemic modality) if a language does not code them differentially in grammar. Ideally, a semantician needs to take into consideration not only the semantic distinctions which are differentially marked in grammar, but also the relevant elements in the immediate communicative context.[58]

[58] However, the mere existence of contextual conditions for the use of an anchoring category is not sufficient for identifying that category in an utterance. For instance, the immediate context of an utterance may include pieces of evidence for a proposition, but the speaker may not allude to them by using formal (not just grammatical) resources available in her language.

Since the semantic space in each domain of anchoring is exhaustively (albeit schematically) partitioned by seven basic anchoring categories, they are best understood in the context of their relations with other categories in the same domain. Hence, in each of the three main sections below, temporal, epistemic and volitional anchoring categories are characterized in terms of how they contrast with other options in the same domain, before individual categories are illustrated.

5.1 Temporal Anchoring Categories

Given below are the usage-based characterizations for the seven temporal categories, which directly follow from their definitions in terms of relative qualifications of temporal locations given in section 4.1. In the context of an utterance,

- SIMULTANEOUS presents an event as unfolding or a state as obtaining at the temporal center. (i.e., it expresses an 'immediate condition'.)
- ANTERIOR presents a SoA as having occurred before the temporal center.
- POSTERIOR presents a SoA as potentially occurring after the temporal center.
- PERFECT expresses a past SoA as well as its effects at the temporal center (immediate conditions).
- PROSPECTIVE expresses a potential event in the future as well as its causes at the temporal center (immediate conditions).
- RECURRENT expresses a repeated occurrence of a SoA in a temporal range around the temporal center. It can specify a frequency of occurrence which may range from 'rarely' to 'always'.
- ATEMPORAL presents the occurrence of a SoA as free from any temporal restriction relative to the temporal center.

Here is a concise account of how the temporal anchoring categories contrast to each other: Both SIMULTANEOUS and RECURRENT are 'about' the temporal center, but while the former focuses on an occurrence at the temporal center, the latter specifies a (vague or precise) frequency for occurrences in a temporal period in the vicinity of the temporal center. ATEMPORAL differs from both SIMULTANEOUS and RECURRENT in that it indicates no specific relation to the temporal center; it rather presents the occurrence of a SoA as not contingent to any temporal perspective (although the presupposed lifetimes of the SoA participants may imply temporal restrictions). Both PERFECT and ANTERIOR involve a reference to the past (relative to the temporal center). But while ANTERIOR solely focuses on a past occurrence, PERFECT is about the temporal center ('present' if no temporal displacement is involved) as much as about past. Similarly, both POSTERIOR and PROSPECTIVE involve a reference to the future, but while POSTERIOR exclusively focuses on a future occurrence,

PROSPECTIVE additionally indexes present causes (e.g., an intention, a tendency, or any other sort of potential) for a future event.

5.1.1 SIMULTANEOUS

SIMULTANEOUS expresses the semantic enclosure of 'continuous aspect' as defined in Comrie (1976: 25-26), including the 'non-progressive' (with states) and the 'progressive' (with dynamic-durative events) subtypes. As a purely semantic category, it can be identified even when an explicit aspect marker is lacking. English sentences below illustrate deictic uses of SIMULTANEOUS:

(5.1) John is taking a shower.

(5.2) John is sleeping.

(5.3) I am going to the office.

(5.4) He knows the answer.

(5.5) The keys are on the table.

In (5.6) and (5.7), SIMULTANEOUS is relative to backward-displaced, and in (5.8) and (5.9), forward-displaced temporal centers:

(5.6) When I left, John was sleeping.

(5.7) Yesterday at five, the keys were on the table.

(5.8) Tomorrow at five, John will be sleeping.

(5.9) When I leave, the keys will be on the table.

Utterances with SIMULTANEOUS always designate a durative SoA (an activity, a state, or an accomplishment).[59] Therefore, although SIMULTANEOUS focuses on the temporal center only, the whole occurrence of the SoA is actually somehow extended in time. This implicit sense of temporal extension is normally stronger with states than with events since states describe a more stable energetic condition. Some examples are given below:

(5.10) He is living in Amsterdam.

(5.11) The whether is nice today.

(5.12) That painting is being exhibited in the National Gallery this month.

[59] SIMULTANEOUS cannot appear with punctual SoAs (achievements and semelfactives), because by definition, such SoAs lack an inherent duration within which to locate the temporal center (see, e.g., Comrie 1976: 42-43). Note that this is a purely semantic restriction: A specific marker in a language primarily identified as a marker of 'continuous' or 'progressive' aspect may appear with a verb which primarily has a punctual meaning. In this case, either the temporal dimension will not be interpreted as SIMULTANEOUS (but, e.g., as an 'imminent future') or the SoA-type not as punctual (but, e.g., as a state which results from a punctual change).

Although Smith (1997: 34) identifies the example replicated in (5.13) as an 'habitual sentence', it is also taken here as expressing SIMULTANEOUS with a relatively extended state (but 'habitual sentences' which involve repeated occurrences are taken as expressing RECURRENT; see section 5.1.6):

(5.13) Susan is happy. (Smith 1997: 34)

SIMULTANEOUS relative to a past temporal center is marked in some languages by a formally non-compositional grammatical strategy, often called a 'past imperfective' or only 'imperfective'. One example is the French *imparfait*:[60]

(5.14) Il pleuvait.
it rain.imparfait
'It was raining.'

SIMULTANEOUS can be seen as constituting one of the 'semantic foci' of the cross-linguistic category types IPFV and PROG in Dahl (1985: 69-89, 90-93), which are distinguished from category types associated with habitual and generic sentences (i.e., HAB, HABG, and HABPAST). Similarly, markers identified as instantiating the semantic labels 'imperfective' and 'progressive' in Bybee, Perkins & Pagliuca (1994: 128-129, 142-143) can be seen as entailing SIMULTANEOUS.

5.1.2 ANTERIOR

Utterances which express ANTERIOR specify an occurrence (or a series of occurrences) of an event or state at a temporal location or in a temporal range which precedes the temporal center (reference time). Unlike PERFECT, which also implies results at the reference time, ANTERIOR solely focuses on a past occurrence. Therefore, a specification of the occurrence time is essential. This specification can be explicitly given in the utterance, or anaphorically received form the discursive context (see section 3.2.2). It can be vague (e.g., *in the evening*, *last month*, etc.) or relatively precise (e.g., *at eight past five*). Below are given some English examples which illustrate the use of ANTERIOR in a deictic way:

(5.15) The meeting started at six.

(5.16) We went to the movies yesterday.

(5.17) I was born in 1971.

(5.18) He must have stopped working at five past six.

(5.19) I wish he had come yesterday.

[60] *Imparfait* has a number of uses which are not strictly temporal. See, for instance, De Mulder & Vetters (2002).

ANTERIOR can also appear relative to a temporal center displaced to past, especially when the speaker wants to emphasize a chronological relation, as seen in the second sentence below (PERFECT, which additionally implies a causal relevance to the displaced center, is more common than ANTERIOR in such contexts):

(5.20) Yesterday at eight, I was still waiting for John. He had left his office at six.

Most utterances traditionally identified as 'past', 'preterit' or 'past perfective' express the semantic category labeled as ANTERIOR here. ANTERIOR entails 'perfectivity' (unless it functions anaphorically; see $\text{ANTERIOR}_{\text{ANA}}$ in section 6.2.1, since it presents an occurrence (or a series of occurrences) as a whole and without reference to its temporal phases.[61] But perfectivity, conceived as a purely semantic dimension, should not be strictly associated with ANTERIOR. For instance, most future utterances also present an occurrence as a single whole (see section 5.1.3 on POSTERIOR).

Some languages have tense systems which distinguish 'degrees of remoteness' in the past (see, e.g., Comrie 1985: 83-101; Dahl 1985: 121-128; Bybee, Perkins & Pagliuca 1994: 98-104). Comrie (1999: 367) illustrates a three-partite past system in Haya (Bantu), symbolizing the three past tenses as P_1, P_2, and P_3. As seen below, P_1 is restricted to 'today', P_2 to 'yesterday', and P_3 to 'before yesterday'. Within the current semantic framework, all three of these sentences would be analyzed as entailing ANTERIOR, with different (still schematic) specifications:

(5.21) Twákôma mbwéènu/*nyéígolo/*íjo.
'We-tied-up (P_1) today/*yesterday/*the day before yesterday.'
(Comrie 1999: 367)

(5.22) Tukomile *mbwéènu/nyéígolo/*íjo.
'We-tied-up (P_2) *today/yesterday/*the day before yesterday.'
(Comrie 1999: 367)

(5.23) Túkakôma *mbwéènu/*nyéígolo/íjo.
'We-tied-up (P_3) *today/*yesterday/the day before yesterday.'
(Comrie 1999: 367)

Markers identified as instances of the category type PFV (and its variants), PAST (and its variants), and PLUPERFECT (PLPFCT) listed in Dahl (1985: 70, 115-116, 145) can be seen as entailing ANTERIOR as their primary semantic foci, many of which also conveying other semantic dimensions in their various uses. The semantic labels 'simple past' and 'perfective' in Bybee, Perkins & Pagliuca (1994: 54-55) also match the definition of ANTERIOR as defined here.[62]

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[61] 'Perfective aspect' is defined in Comrie (1976: 16) as indicating "the view of the situation as a single whole, without distinctions of the various phases that make up the situation".

[62] 'Past' and 'perfective' are distinguished in Bybee, Perkins & Pagliuca (1994) (also in Dahl 1985) only on the basis of the availability of an 'imperfective' gram in a language:

5.1.3 POSTERIOR

POSTERIOR is signaled in most utterances traditionally identified as involving future time reference. In English assertive utterances, POSTERIOR is typically expressed by the auxiliary verb *will* (5.24). The present tense can also be used, e.g., in 'scheduled futures' as in (5.25):

(5.24) The repairman will come at nine.

(5.25) The match starts at eight.

Like ANTERIOR, POSTERIOR also entails 'perfectivity' (unless it makes part of an anaphoric time expression; see $\text{POSTERIOR}_{\text{ANA}}$ in section 6.2.1), because it also presents an occurrence in its totality, without concern for the internal stages of unfolding.

POSTERIOR can be used relative to a backward-displaced temporal center, as the second sentence below illustrates:

(5.26) I came home at six. The match would start at seven.

Some languages have grammatical distinctions for different degrees of remoteness in the future. For instance, Bemba (Bantu) grammatically marks four degrees in future, in addition to the almost symmetrical four-way system for past (Givón 1972; cited in Chung & Timberlake 1985: 208-209):

(5.27) ba-**álá**á-bomba
'They'll work (soon, within three hours).'

(5.28) ba-**lé**é-bomba
'They'll work (later today).'

(5.29) ba-**kà**-bomba
'They'll work (tomorrow).'

(5.30) ba-**ká**-bomba
'They'll work (after tomorrow).'

Some scholars attribute a 'modal' character to future, or consider it as an epistemic, rather than a temporal category, because of its inherent indeterminacy as to possible alternatives of unfolding. Within the current semantic framework, POSTERIOR is taken as a purely temporal category, and the sense of indeterminacy is attributed to the inherent contrast of 'actuality' vs. 'potentiality' within the temporal domain. A future SoA can be associated with certainty as well as

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Whether a particular gram is interpreted as past of perfective depends on whether the language in which it occurs has an imperfective and whether the gram in question contrasts with the imperfective, in which case it is a perfective, or co-occurs with it, in which case it is a past (Bybee, Perkins & Pagliuca 1994: 51).

with epistemic modality.[63] Although English *will* is used in both categorical (CERTAIN) and predictive (PROBABLE) futures, many languages grammatically distinguish these two uses. For instance, futures with *-(y)AcAG* in Turkish indicate personal certainty (5.31), while those with *-Xr* convey a less-than-certain judgment (5.32) (see also the discussion in section 8.4.8). Givón's (1995: 147) examples from Bemba illustrate a similar contrast: the future sentence in (5.33) conveys a higher degree of certainty than the one in (5.34), which uses a subjunctive (or, irrealis) marker:

(5.31) Gel-**ecek**.
come-**(y)AcAG**
'(S)he will/is going to come.'

(5.32) Gel-**ir**.
come-**Xr**
'(S)he will probably / she may come.'

(5.33) a-**k**à-isa.
s/he-**FUT**-come/IN**DI**C
*'She **will** come.'*
(Givón 1995: 147)

(5.34) a-**inga**-isa.
s/he-**SUBJUN**-come
*'She **may / might / could** come.'*
(Givón 1995: 147)

In languages which systematically mark a 'realis'-'irrealis' distinction in their grammar, it is mostly irrealis which is associated with POSTERIOR.[64] An irrealis strategy (which can be expressed by a separate morpheme or by a choice between alternative verbal stems) may include POSTERIOR in its overall semantic range, as in the example (5.35) from Muyuw (Papuan Tip) (Bugenhagen 1994; cited in Palmer 2001) and in example (5.36) from Mao Naga (Tibeto-Burman) (Bhat 1999: 67). An irrealis marker can also combine with a separate future marker, as seen in the Takelma (Penutian; extinct) sentence in (5.37) (Sapir 1912; cited in Chung & Timberlake 1985) and in the Serrano (Uto-Aztecan; nearly extinct) sentence in (5.38) (the 'dubitative' particle *t(a)* taken as an irrealis marker by Palmer 2001: 167):

[63] Dahl (1985: 106) notes that " 'future time reference' is a more constant element of [the category type] FUT, […] than the modal features of this category, which in most cases may or may not be present".

[64] There are exceptions. For instance, the two future markers in Central Pomo are grammatically classified as realis (Chafe 1995: 358-359).

(5.35) yey **b**-a-n Lae nubweg.
I **IRR**-1sg-go Lae tomorrow
'I will go to Lae tomorrow.'
(Bugenhagen 1994: 18; cited in Palmer 2001: 145)

(5.36) ai izo ocü vuta **le**.
I today home go **IRREALIS**
'I will go home today.'
(Bhat 1999: 67)

(5.37) yaná-t'e.
go(**IRR**)-1sg(**FUT**)
'I will go.'
(Sapir 1912; cited in Chung & Timberlake 1985: 204)

(5.38) 'i:p t wahi' pinkiv.
here **DUB** coyote pass+**FUT**
'The coyote will pass here.'
(Hill 1967: 21; cited in Palmer 2001: 167)

Many languages mark 'scheduled' or 'expected' futures differently from categorical or predictive futures. One common strategy is the use of 'present' or 'imperfective' forms in such uses, as Comrie (1985) illustrates with the English sentence in (5.39). Bybee, Perkins & Pagliuca (1994) identify the Inuit (Eskimo-Aleut) suffix *sussaa* as a marker which exclusively conveys expected future (5.40):

(5.39) The train departs at five o'clock tomorrow morning. (Comrie 1985: 47)

(5.40) aqagu avalattussaavunga
tomorrow go.to.Denmark.is.to.1.s:INDIC
'Tomorrow I am to go to Denmark.'
(Bybee, Perkins & Pagliuca 1994: 250)

Expressions of epistemic modality or of volitional moods often entail POSTERIOR, even when it is not expressed with a separate marker. For instance, the English auxiliary verbs *may*, *might*, and *could* (5.41) can signal POSTERIOR in addition to epistemic possibility (PROBABLE). POSTERIOR is also a semantic ingredient of most expressions of wish or hope (5.42) and directive utterances (5.43). In languages which use a double marking in directives, one of the markers is often a generalized irrealis marker (rather than a specific marker for future), as in the expression of obligation in Caddo (Southern Caddoan) (5.44):

(5.41) He may/might/could come tomorrow.

(5.42) I hope he comes tomorrow.

(5.43) Can you come back at five?

(5.44) kas-sa-náy=?aw
OBLIGATIVE-3RD.AGENT.IRREALLIS-sing
'He should/is supposed to sing.'
(Chafe 1995: 356)

Markers identified as instantiating the major category type FUT in Dahl (1985: 104) can be seen as entailing POSTERIOR as their primary semantic focus. POSTERIOR can also be identified in the less frequent category type PRED (which can also be used in habitual contexts), as well as in the grams identified as primarily conveying the 'future' meaning in Bybee, Perkins & Pagliuca (1994: 252-253).

5.1.4 PERFECT

The basic anchoring category PERFECT matches the 'perfect aspect' defined in Comrie (1976: 52) as indicating "the continuing present relevance of a past situation". The four main types of perfects identified in Comrie (1976), namely, 'perfect of result', 'perfect of recent past', 'experiential perfect', and 'persisting perfect' all fit the schematic definition of PERFECT.[65] They will be distinguished here with different specifications, as PERFECT/result/, PERFECT/recent past/, PERFECT/experience/ and PERFECT/persistent/.

The element of 'causal relevance' inherent in the definition of PERFECT is most transparently visible in the perfect of result. For instance, (5.45) conventionally implies that John does not have his keys with him at the time of utterance. The sense of 'experience' involved in examples like (5.46) can also be construed as a causal consequence of past events. In a perfect of recent past as in (5.47), the occurrence is virtually adjacent to the temporal center, which directly makes it causally relevant to the temporal center.[66] A persisting perfect as in (5.48) establishes a causal link between

[65] In the 'perfect of result', "a present state is referred to as the continuing relevance of a previous situation" (Comrie 1976: 56). The 'experiential perfect' indicates "that a given situation has held at least once during some time in the past" (Comrie 1976: 58). The 'perfect of recent past' is used "where the present relevance of the past situation referred to is simply one of temporal closeness, i.e., the past situation is very recent" (Comrie 1976: 60). The 'perfect of persisting situation' (Comrie 1976: 60) is used for events or states which begun in the past and are still continuing at the reference time.

[66] As Comrie (1976: 60) puts it, "[…] while present relevance does not imply recentness, recentness may be a sufficient condition for present relevance".

an ANTERIOR temporal range and the SIMULTANEOUS temporal location by indicating that a specific SoA obtains throughout the whole period.[67]

(5.45) John has lost his keys. (PERFECT/result/)

(5.46) Have you ever been to Stockholm? (PERFECT/experience/)

(5.47) John has just left. (PERFECT/recent/)

(5.48) John has been away for three months. (PERFECT/persisting/)

PERFECT can also appear under the scope of a temporal displacement. (5.49) and (5.50) illustrate PERFECT/result/ and PERFECT/experience/ in temporal frames displaced to past, and (5.51), PERFECT/recent/ in one displaced to future:

(5.49) I had to spend the night in a hotel because I had lost my keys.

(5.50) When I was twenty, I had never been to New Zealand.

(5.51) At five, he will just have arrived.

Not all languages grammatically distinguish ANTERIOR (past perfective) from PERFECT. For instance, Turkish expresses both past perfective and different types of perfect (other than persisting perfect) with the suffix *-DI* (or *-mIş* in some morphosyntactic contexts) (see Kornfilt 1997: 349-351, Arslan 2001). Similarly, in spoken French, a combination of the auxiliary verbs *avoir* or *être* with the past participle form of the verb is used in expressing both categories.

Dahl (1985: 130) gives a list of markers which code varieties of the cross-linguistic gram type PFCT, noting that it mostly receives periphrastic expression across languages (Dahl 1985: 129). Bybee, Perkins & Pagliuca (1994: 61-63) use the label 'anterior' rather than 'perfect', to avoid confusion caused by the similarity of the term 'perfect' to 'perfective'. Bybee, Perkins & Pagliuca (1994: 64-65) give a list of markers from 43 languages, which exclusively convey the 'anterior' meaning ('young anteriors').

PERFECT is often included in the semantic range of a more general marker which is also used for conveying e.g., state of result, new information, inference, or hearsay. For instance, Bybee, Perkins & Pagliuca (1994: 79) provide a list of markers ('old anteriors') which can be used for 'anterior' among other meanings in 25 languages. Li, Thompson & Thompson (1982) characterize the Chinese marker *le* as indicating 'currently relevant state', which includes not only temporal, but

[67] 'Persisting perfect' is somewhat different from other types of perfect illustrated here, because it does not imply any immediate conditions at the temporal center other than the continued holding of the expressed SoA. Although it could have been delimited as a separate anchoring category on the semantic space of anchoring relations, for convenience, it will be taken here as a subcategory of PERFECT and labeled as PERFECT/persisting/.

also epistemic and illocutionary relevance. Anderson (1982) compares ranges of polyfunctionality of 'perfect' markers in English, Turkish, and Mandarin Chinese.

5.1.5 PROSPECTIVE

The anchoring category PROSPECTIVE implies present causes for a potential event in the future. A present cause may involve a decision, an intention, an energetic potential, or another sort of propensity towards a future event. Below are two examples from English. (5.52) conventionally implies John's present decision or intention to resign, and (5.53) implies unfavorable factors at the time of utterance:

(5.52) John is going to resign.

(5.53) John is bound to fail.

PROSPECTIVE is named after and conceived in the same way as what Comrie (1976: 64-65) dubs the 'prospective aspect' and characterizes as the mirror image of the perfect aspect. In his example below, Bill's intention to throw himself off the cliff is conceived as "already present seeds of some future situation" (Comrie 1976: 65):

(5.54) Bill is going to throw himself off from the cliff. (Comrie 1976: 64, 65)

Comrie subsumes expressions of 'imminent future' as in (5.55) and (5.56) under 'prospective aspect', since imminence automatically implies a causal connection to the current temporal state. Bybee, Perkins & Pagliuca (1994: 245-248) label similar uses as 'immediate future'. In their examples from Baining (East Papuan) replicated in (5.57) and (5.58), the prefix *i-* conveys simple future and the particle *sa* expresses immediate future (*sa* is also used for perfective and imperative meanings):

(5.55) The ship is about to sail. (Comrie 1976: 64)

(5.56) The ship is on the point of sailing. (Comrie 1976: 64)

(5.57) **i**k ḡoa tes.
FUT:1/2 1.s eat
'I will eat.'
(Bybee, Perkins & Pagliuca 1994: 245)

(5.58) **sa** ḡoa tes.
PERF/IMM FUT 1.s eat
'I have eaten' / 'I will eat immediately.'
(Bybee, Perkins & Pagliuca 1994: 245)

Imminent (or immediate) future is taken in the present framework as the mirror image of PERFECT/recent/, and represented as PROSPECTIVE/imminent/.

PROSPECTIVE/imminent/ is also involved (along with WANTED) in most directive utterances, since they generally urge, invite or permit the addressee(s) to take action right away:

(5.59) Can you open the window please?

(5.60) Put him in jail!

(5.61) You may go now.

Dahl (1985: 111-112) notes that "there is some evidence for postulating a cross-linguistic category PROSP" and identifies the Sudanese (Semitic) marker *bade*, the French *aller (+infinitive)* and the Afrikaans (Germanic) *gaan (+infinitive)* constructions as conveying the prospective meaning. Grams which convey future with an additional element of 'intention' or 'willingness' in Dahl (1985: 106-108) and in Bybee, Perkins & Pagliuca (1994: 256-257) can also be taken as expressing PROSPECTIVE in their semantic ranges, since intention and willingness count as potential causes for future actions.

5.1.6 RECURRENT

RECURRENT expresses repeated occurrences in a temporal range conceived around the temporal center. It can be associated with a frequency of occurrence which may range from 'rarely' to 'always'. The span of the temporal range and the frequency of occurrence may or may not be explicitly given. In English, a range can be specified by adverbials such as *nowadays*, *recently*, *in recent years*, *today*, *these days*, *in our time*, etc, and a frequency by *rarely*, *sometimes*, *now and then*, *frequently*, *often*, *always*, *every Friday*, *in the evenings*, etc. RECURRENT differs from the SoA-internal dimension (temporal type) 'iterativity' in that it specifies repetitions on different occasions rather than an iterative pattern on a single occasion.

Below are some examples of RECURRENT with an achievement (5.62), an accomplishment (5.63), an activity (5.64) and a state (5.65). As seen in (5.66) and (5.67), RECURRENT can also be used relative to a backward- and forward-displaced temporal center:

(5.62) John come by every now and then.

(5.63) Mary cooks delicious pies nowadays.

(5.64) Mary rarely cooks nowadays.

(5.65) This boy stands in the same place every evening.

(5.66) In the past, we rarely went to movies.

(5.67) Next month, I will cook more often than I do now.

The definitions of 'habitual aspect' in Comrie (1976: 27-28) and in Smith (1997: 34-35) entail, but do not exactly match the definition of RECURRENT, since they do not necessarily involve repeated occurrences.[68,69] Below are some of Comrie's and Smith's examples of 'habitual aspect' which match the anchoring category RECURRENT as defined here:

(5.68) Sally used to throw stones at my window in the morning. (Comrie 1976: 28)

(5.69) We're going to the opera a lot these days. (Comrie 1976: 37)

(5.70) At that time I was working the night shift. (Comrie 1976: 37)

(5.71) My cat eats mice frequently. (Smith 1997: 34)

(5.72) Fiona was often in love. (Smith 1997: 34)

(5.73) Ewa got up at noon last summer. (Smith 1997: 35)

Markers identified as instantiating the cross-linguistic category type HAB (and HABPAST) in Dahl (1985: 95-98) can be taken as containing RECURRENT in their semantic range, as they "express actions that take place habitually or repeatedly" (Dahl 1985: 95) and typically involve "quantification over a set of occasions which is given explicitly or by context" (Dahl 1985: 97). Bybee, Perkins & Pagliuca's (1994: 127, 153-154) semantic label 'habitual', characterized following Comrie (1976), subsumes both RECURRENT and ATEMPORAL, since it does not consistently distinguish repeated occurrences from gnomic or characterizing predications. The semantic label 'frequentative' (Bybee, Perkins & Pagliuca 1994: 127) also matches the schematic definition of RECURRENT, with the additional specification that the expressed event occurs frequently.

5.1.7 ATEMPORAL

ATEMPORAL presents the occurrence of a SoA without implying any temporal restriction relative to the temporal center. It can appear with generic subjects (i.e., kinds) as well as specific subjects (i.e., individuals), respectively yielding 'gnomic' utterances, as in (5.74) and (5.75), and 'characterizing' utterances, as in (5.76) and (5.77). Gnomic and characterizing utterances are similar in that they both denote a predication which is not restricted to any particular temporal location or temporal range. As such, they typically express an inherent or characteristic behavior or property of the subjects:

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[68] Comrie (1976: 26-32) subsumes under 'habitual aspect' regular occurrences in a period as well as gnomic and characterizing sentences (i.e., which refer to essential, inherent, or characteristic properties or behaviors of kinds or individuals). In Comrie (1985: 39-40), both (temporally restricted) habituals and gnomic-characterizing sentences are subsumed under the rubric 'present tense'. In the present framework, gnomic and characterizing sentences are analyzed as expressing ATEMPORAL rather than RECURRENT (see section 4.5.1.6).

[69] Smith's (1997) 'habitual' includes states which are relatively extended in time. Here, only utterances which involve repeated occurrences are taken as expressing RECURRENT; those which involve a single extended occurrence of a state are taken as expressing SIMULTANEOUS (see section 5.1.2).

(5.74) Cats see in the dark.

(5.75 A whale is a mammal.

(5.76) John is smart.

(5.77) Marry adores ice cream.

What are called 'generic' sentences in Dahl (1975, 1985) match the anchoring category ATEMPORAL defined here; they too may involve both kinds and individuals: "The characteristic property of those (generic) sentences is their 'nomic' or 'lawlike' character - they describe the typical or characteristic properties of a species, a kind, or an individual" (Dahl 1985: 99). Carlson's (1977, 1989) definition of 'generic sentences' is also similar; they express properties of kinds or objects and do not refer to specific temporal stages. (5.78) and (5.79) are examples from Dahl (1975), (5.80) and (5.81) from Carlson (1989):

(5.78) Beavers build dams. (Dahl 1975: 99)

(5.79) John smokes cigars. (Dahl 1975: 99)

(5.80) Dogs bark. (Carlson 1989: 167)

(5.81) The sun rises in the east. (Carlson 1989: 167)

Dahl (1985: 100) notes that cross-linguistically generic sentences tend to lack overt grammatical marking: "[…] 'generic' sentences seem to be the cases that are most often unmarked for TMA". In English too, ATEMPORAL is typically expressed by the formally least marked TAM strategy, namely, the 'present tense', as seen in the examples above. But it can also be conveyed by the auxiliary verb *will*, as illustrated by the following sentence, which is identified by Bybee, Perkins, & Pagliuca (1994: 157) as conveying a 'characteristic behavior':

(5.82) Water will boil at 100 degrees Celcius. (Bybee, Perkins & Pagliuca 1994: 157)

ATEMPORAL does not specifically convey an actual occurrence at the temporal center. It rather presents the happening or obtaining of a SoA as independent of any specific time point or period. But this does not mean that it claims 'eternal validity'.[70] An utterance which expresses ATEMPORAL can be associated with temporal restrictions due to the presupposed lifetimes of SoA-participants (which are normally shorter for individuals than for kinds). For instance, (5.83) is true of John as we know him now; it does not say that John has always been and will always remain wise. Similarly, (5.84) is only true of typical cats as we know them today:

[70] As ter Meulen (1986: 127) puts it, "the timeless or 'eternal' character of generic information does not mean such information remains true for once and for all. As with all other parts of our knowledge about the world, it is permanently up for revision".

(5.83) John is a wise man.

(5.84) Cats hate to get wet.

The subjects of gnomic sentences can be coded in different ways. All three of ter Meulen's (1986) examples below are gnomic sentences (dubbed 'generic' in ter Meulen), in that they denote a characteristic property or behavior of a species (rather than a definite entity). The subject is a bare plural in (5.85), it includes an indefinite article in (5.86) and a definite article in (5.87):[71]

(5.85) Donkeys are stubborn. (ter Meulen 1986: 124)

(5.86) A donkey is stubborn. (ter Meulen 1986: 124)

(5.87) The donkey is stubborn. (ter Meulen 1986: 124)

In the literature on TAM categories, 'temporal unrestrictedness' (which is associated with ATEMPORAL here) is not always distinguished from the repeated occurrences in a certain temporal period (associated with RECURRENT here). For instance, Comrie (1976: 27-28) and Bybee, Perkins & Pagliuca (1994: 127, 153-154) tend to subsume both of these temporal values under what they call the 'habitual' meaning.

Some languages grammatically distinguish ATEMPORAL from contingent temporality only in copular sentences. Comrie (1976: 104) reports that in Irish, the copular verb *is* conveys an 'absolute' state, while *tá* conveys a 'contingent' state (the same contrast is exhibited by Scots Gaelic opposition between *is* and *tha*). While the sentence in (5.88) "simply tells us that the paper is white", that in (5.89) "implies that the whiteness of the paper is only a temporary state" Comrie (1976: 104). In terms of the semantic space of anchoring, the 'absolute' predication in (5.88) amounts to the signaling of ATEMPORAL, and the 'contingent' predication in (5.89), to that of SIMULTANEOUS:

(5.88) **Tá** an páipéar bán.
'The paper is white.' (as a property)
(Comrie 1976: 104)

(5.89) **Is** bán an páipéar é.
'The paper is white.' (as it stands now)
(Comrie 1976: 104)

The same contrast is found between the Spanish copular verbs *ser* and *estar* (in non-locative contexts) (Comrie 1976: 106, Maienborn 2005), the Portuguese *ser* and *estar* (Comrie 1976: 106) and between the existence and lack of a pronominal copula in Hebrew (Greenberg 1994, 2002). Within

[71] See Behrens (2000) for a typological study of how the coding of nominal arguments interacts with genericity.

the present semantic framework, the Spanish sentence in (5.90) and the Hebrew sentence in (5.92) would be analyzed as expressing ATEMPORAL and the corresponding sentences in (5.91) and (5.93) as expressing SIMULTANEOUS:

(5.90) Juan **es** enfermo.
Juan ser.3SG ill
'Juan is ill (i.e., he is an invalid).'
(Comrie 1976: 105)

(5.91) Juan **está** enfermo.
Juan estar.3SG ill
'Juan is ill (i.e., he is now ill).'
(Comrie 1976: 105)

(5.92) ha-Samayim **hem** kxulim.
the-sky 3.PL.MASC blue
'The sky is blue (generally blue, blue by its nature).'
(Ben David 1971; cited in Greenberg 1994: 54)

(5.93) ha-Samayim kxulim.
the-sky blue
'The sky is blue (now/today)'
(Ben David 1971; cited in Greenberg 1994: 54)

ATEMPORAL can also appear under the scope of a temporal displacement. An example is given in (5.94), which is taken by Dahl (1975, 1985: 100) as a generic sentence with past time reference. In terms of the semantic framework of anchoring, such sentences involve a temporal displacement to the past. Such temporal shifts are generally triggered by the temporal connotations of a SoA-participant, such as *dinosaurs* in (5.94) below. This example will be seen as conveying ATEMPORAL under the scope of a temporal displacement, since it denotes a characteristic behavior of a kind, rather than expressing a contingent occurrence (or a series of occurrences) at a specific temporal point or in a specific temporal range:

(5.94) Dinosaurs ate kelp. (Dahl 1985: 100)

Due to their rule-like and definitional character, gnomic statements are typically found in scientific and philosophical discourse. But they can also appear in casual talk and ordinary conversation, to provide information about properties and behavior of kinds or species.

ATEMPORAL can be identified as the primary semantic focus of the cross-linguistic category type labeled as HABG in Dahl (1985: 98-100).

5.2 Epistemic Anchoring Categories

The basic epistemic anchoring categories, which were defined in section 4.1 in terms of relative qualifications of 'thoughts', are characterized below in more usage-based terms. In the context of an utterance,

- NEW INFORMATION presents a proposition as new and not well-integrated into the current knowledge state (i.e., it expresses a piece of immediate evidence.)
- CERTAIN presents a proposition as already well-assimilated to the current knowledge state.
- HYPOTHETICAL presents a proposition as unknown relative to the current knowledge state.
- INFERRED expresses a definitive (certain) conclusion on the basis of immediate evidence.
- CONJECTURED expresses a non-definitive (uncertain) conclusion on the basis of immediate evidence.
- PROBABLE expresses an evaluation as to the likelihood of the truth of a proposition. It can specify a degree of probability which may range from 'very unlikely' to 'virtually certain'.
- GENERAL FACT presents a proposition as one for which the truth is taken as generally valid, rather than as being part of a personal knowledge base.

Epistemic anchoring categories contrast to each other along three parameters: (i) whether or not they involve an evidential dependency (ii) whether or not they involve categorical certainty, (i) whether they involve general validity (strong factuality) or personal certainty (contingent knowledge).

The categories which indicate evidentiality are NEW INFORMATION, INFERRED, and CONJECTURED.[72] NEW INFORMATION is an evidential category simply because it conveys a piece of immediate evidence (i.e., a proposition which has newly come into awareness and not (yet) been integrated to the current knowledge state). INFERRED is evidential simply because it entails NEW INFORMATION; it conveys that a conclusion is arrived at on the basis of immediate evidence. Simply stated, while NEW INFORMATION expresses a piece of immediate evidence itself, INFERRED expresses what this evidence points to (what the speaker concludes from it). CONJECTURED differs from INFERRED in the degree of certainty it expresses for the conclusion of an evidence-based reasoning. While INFERRED involves a definitive conclusion (i.e., one associated with certainty), CONJECTURED involves a non-definitive one (one associated with hypotheticality). Although these evidential categories (especially NEW INFORMATION) are most easily identified in contexts where surprising (or

[72] Any piece of information conveyed in language is based on some kind of evidence (subjective or objective, acquired via personal experience, introspection, reasoning, teaching, etc.). But in the present framework, an utterance is identified as evidential only if it (explicitly or implicitly) refers to a piece of evidence (or to the existence and/or type of a piece of evidence).

unexpected) information comes to light, 'surprise' (or, 'mirativity') is not a necessary ingredient in all their manifestations.

The other epistemic categories, namely, CERTAIN, GENERAL FACT, PROBABLE and HYPOTHETICAL are non-evidential, because they indicate neither the existence nor the type of any evidence. Both CERTAIN and GENERAL FACT express categorical certainty. But while GENERAL FACT associates a proposition with general validity (e.g., expressions of world-knowledge, culturally-sanctioned knowledge, or encyclopedic information), CERTAIN presents a piece of information as contingent to the current, personal knowledge state (e.g., a piece of information acquired via direct experience). As such, GENERAL FACT denotes stronger factuality compared to CERTAIN. PROBABLE corresponds to the traditional category of 'epistemic modality'. It expresses a (precisely or vaguely specified) degree of probability (which includes epistemic possibility and epistemic necessity) for the truth of a proposition, without indexing any evidential dependency. HYPOTHETICAL is similar to PROBABLE, because it too involves uncertainty and is non-evidential. But while PROBABLE expresses a (specific or vague) degree on a scale of probability, HYPOTHETICAL does not suggest any specific epistemic assessment; it merely identifies a proposition as one of which the truth is 'unknown'.

5.2.1 NEW INFORMATION

NEW INFORMATION conveys a newly apprehended or an immediately significant piece of information. In its most typical manifestation, it expresses a piece of evidence which is manifest to the speaker at the time of utterance. It is generally (but not necessarily) coupled with an element of surprise or unexpectedness. It is different from INFERRED in that it does not imply any epistemic indirection (i.e., does not signal a conclusion inferred from evidence); it directly expresses the immediate evidence itself.

NEW INFORMATION matches what Nichols (1986) calls 'immediate meaning'. Nichols identifies this semantic dimension in the use of the Chinese Pidgin Russian marker *est*. Speakers can use *est* "in a more or less spontaneous reaction to a new, salient, often surprising event as it just happens" (Nichols 1986: 248).[73] For instance, the sentence in (5.95) is uttered by Dersu Uzala, while he, "standing at a riverbank as a storm approaches, notices high water and remarks on it" (Nichols 1986: 250).[74] But the corresponding sentence in (5.96) without *est* does not convey any immediate reaction to a newly perceived situation: "Dersu has been aware for some time that a flood might take place" (Nichols 1986: 251):

[73] Nichols (1986) also shows that *est,* when used with punctual verbs, can convey the 'inferential' meaning in past contexts (with third persons), and the 'predictive' meaning (e.g., prediction based on present evidence) in future contexts.

[74] Nichols (1986) uses a corpus which she draws from the writings of the ethnographer Arsen'ev (1960a, 1960b), who recorded his linguistic interactions with his Tungusic guide in Chinese Pidgin Russian. The two sentences given here are of Arsen'ev's Nanai guide Dersu Uzala.

(5.95) Voda pribavljaj **est**.
water rise **est**
'The water's RISING.'
(Arsen'ev 1960a: 42; cited in Nichols 1986: 250)

(5.96) Kamni smotrju: voda pribavljaj.
rocks look water rise
'I'm looking at the rocks: the water's rising.'
(Arsen'ev 1960b: 47; cited in Nichols 1986: 250)

NEW INFORMATION partly overlaps with the meaning of the grammatical category 'mirative', defined in DeLancey (1997: 35-36, 2001: 369, 379) as marking information which is 'new to the speaker'.[75] For instance, the Hare (Athapaskan) sentence-final particle *lõ*, discussed in DeLancey (1997: 38-40), can convey NEW INFORMATION when used with imperfective verbs. (It can also code 'inference' or 'hearsay', especially with perfective verbs). For instance, (5.97) could be uttered "on finding someone who was supposed to be an abstainer putting a glass of liquor to his lips" (DeLancey 1997: 40). In a similar example (5.98) from Western Apache (Athapaskan), de Reuse (2003: 81) identifies the particle *lą̄ą̄* (which is the cognate of the Hare *lõ*) as "more fundamentally a mirative than an inferential". The prefix *rahe-* in the Nepali (Indo-Iranian) example in (5.99), which is uttered upon the speaker's instantaneous realization of the beauty of a lake (Michailovsky 1996; cited in Lazard 2000), also expresses NEW INFORMATION:

(5.97) ĩdõ **lõ**.
drink.2 **lõ**
'You're drinking!'
(Delancey 1997: 40)

(5.98) Kīī Nn̲ēē itisgo nłt'ēēgo ch'idits'ad **lą̄ą̄**!
he Apache more 3SG.IMPERF.ASP.be.good=SUB SG.IMPERF.ASP.understand MIR
'He understands Apache better!'
(de Reuse 2003: 81)

[75] Under 'mirativity' DeLancey (1997: 36) covers semantic dimensions variously described as information for which the speaker is 'not prepared' (Slobin & Aksu 1982), 'non-expected' information (Egerod & Hansson 1974), 'new knowledge' (DeLancey 1986, 1990) and 'immediate meaning' (Nichols 1986). But 'mirative' (DeLancey 1997, 2001; Guentchéva 1996a,b and Lazard 1996, 1999, 2000) and 'admirative' (Friedman 1986, 2000, 2003) include not only direct expressions of newly emerged evidence, but often also inferences based on such evidence. In the present framework, NEW INFORMATION is restricted to the former case, and markers which signal a change in the knowledge state due to a direct or indirect inference are taken as expressing INFERRED rather than (just) NEW INFORMATION (see section 5.2.4). Moreover, while 'mirative' and 'admirative' entail 'surprise' by definition, surprise is not taken a here s a necessary ingredient of NEW INFORMATION.

(5.99) āhā , kasto rāmro pokhrī **rahe**cha!
ah que beau lac est
'Ah! qu'il est beau, le lac!'
(Michailovsky 1996: 111; cited in Lazard 2000: 211)

English does not possess any grammatical opposition which consistently distinguishes old (or well-integrated) information (CERTAIN) from new (or not integrated) information (NEW INFORMATION). But DeLancey (2001: 377) states that mirativity can be expressed in English by a special intonational pattern, which is "an exaggerated version of the declarative intonation, with the tonic rise considerably higher". Brisard (2002b) goes one step further and illustrates the use of the English progressive for expressing surprise. Brisard (2002b: 270) suggests that the 'imperfectivization' in (5.100) below indicates that the subject's behavior "is not what one would expect, given what is known about the subject, but that it constitutes something of a surprise":

(5.100) You are being silly. (Brisard 2002b: 270)

Brisard's observation as to the association of the English progressive with surprise is in line with Nichols' (1986: 254-256) generalization as to the covariance of 'perfectivity' with the 'inferential' meaning (INFERRED as defined here), and of imperfectivity with the 'immediate' meaning (NEW INFORMATION as defined here). As Nichols also proposes, the 'immediate' meaning (NEW INFORMATION) is most likely combined with present continuous (SIMULTANEOUS), because it will often be conditioned by the perception of newly emerging and currently ongoing situations. (5.101) and (5.102) below illustrate English expressions in which both SIMULTANEOUS and NEW INFORMATION (with surprise) are signaled.

(5.101) There is a cat on my bed!
(e.g., the speaker enters the room and sees a cat sitting on her bed.)

(5.102) You are still working! (e.g., the speaker finds the addressee working at a very late hour.)

But NEW INFORMATION is not strictly coupled with SIMULTANEOUS. As illustrated by the following expressions of surprise, it can also be there in expressions about relatively recent events (PERFECT/recent/) (5.103), imminent happenings (PROSPECTIVE/imminent/) (5.104), and even in expressions of newly discovered facts concerning habitual or gnomic SoAs (ATEMPORAL) (5.105):

(5.103) The man has jumped to the river!

(5.104) The man is going to jump to the river!

(5.105) These rats see in the dark! (e.g., a recent discovery by a biologist)

NEW INFORMATION does not necessarily convey that the expressed piece of information is new for the speaker (which is, nonetheless, mostly the case in causal speech). It can also be identified

when a piece of information is presented as new or immediately significant relative to the knowledge state of the addressee(s) (for instance, in reporting 'hot news'), or relative to a knowledge state assumed to be shared by the interlocutors (e.g., in the informative segments of an argumentative discourse).

5.2.2 CERTAIN

CERTAIN expresses a contingent piece of information which is well-integrated to the current knowledge state, without indexing any evidence. In its most typical manifestation, it expresses the speaker's personal knowledge, which can be based on her experience, observation, perception, introspection, or on information received from another source.

The semantic enclosure of CERTAIN includes what Faller (2002) calls 'personal information' (as opposed to 'encyclopedic information'), which she characterizes as "information about events in the speaker's private life" (Faller 2002: 18, 133). DeLancey's (2001) characterization of 'unmarked knowledge status' also largely matches the anchoring category CERTAIN defined here:

> The unmarked knowledge status is a proposition which is known by the speaker by direct experience, is assumed to be certainly true, and is fully consistent with the rest of speaker's knowledge of the world (DeLancey 2001: 380).

CERTAIN is grammatically unmarked in English:

(5.106) John lives in the neighborhood.

(5.107) He was here yesterday.

(5.108) John is working hard nowadays.

(5.109) They will be in Ankara next week.

In languages which grammatically mark evidential distinctions, one often encounters paradigms labeled as 'direct evidence', 'direct experience', 'unmarked evidential', or 'visual'. In some cases, a closer inspection may reveal that these actually express personal certainty without specifically indexing the existence of any piece of evidence. For instance, Aikhenvald (2003b: 134) identifies *-naka* in the present, *-ka* in the recent past and *-na* in the remote past as constituting the 'visual' paradigm in Tariana (Maipuran; nearly extinct). An example with *-ka* is replicated in (5.110) below. In the current framework, this paradigm is taken as signaling CERTAIN (rather than one of the evidential categories NEW INFORMATION, INFERRED or CONJECTURED), because it is not only used for information acquired through seeing, but also for "events for which speaker takes full responsibility and/or has personal involvement" (Aikhenvald 2003b: 136).[76] The same holds

[76] The semantic range of the Tariana 'visual' also seems to cover GENERAL FACT, as it is also used for "generally known" facts (Aikhenvald 2003b: 136).

with what Barnes (1984: 257, 259) (as well as Palmer 2001: 36-37 and Aikhenvald 2004: 60, 86) identifies as the 'visual' paradigm in Tuyuca (Tucanoan), since it is used not only for events actually observed by the speaker, but also for "those he himself is the actor" as in (5.111), as well as for " 'timeless' expressions that are within the realm of the speaker's experience" (Barnes 1984: 259) as in (5.112):

(5.110) Ceci tfinu-nuku du-kwisa-**ka**.
Cecília dog-TOP.NON.A/S 3sgf-scold-**REC.P.VIS**
'Cecília scolded the dog (I saw it).'
(Aikhenvald 2003b: 134)

(5.111) atí-**wi**.
'I came.'
(Barnes 1984: 259)

(5.112) ĩsã́ kõnẽ́a hĩĩ́-**a**.
'We call them woodpeckers.'
(Barnes 1984: 259)

5.2.3 HYPOTHETICAL

HYPOTHETICAL presents a proposition as merely unknown but possible. It neither conveys any estimation of likelihood nor indexes any immediate evidence.

Giridhar (1994: 309-310) reports that the construction *v-e v* in Mao Naga (Tibeto-Burman), where *v* denotes a verb and *-e* is a concessive mood marker, can be used to convey what he calls 'Stressed Possibility' (in addition to its use for 'Unconcerned Neglect'). The meaning expressed by this construction fits well the epistemic category HYPOTHETICAL as defined here:

(5.113) sibo-no hayi sho-**e** sho-tie (pe-loshüe)
Sibo ricebeer drink-**e** drink-that can't say
'It is possible that Sibo drank ricebeer (can't say).'
(Giridhar 1994: 310)

HYPOTHETICAL is somehow similar to PROBABLE, which is the anchoring category used for expressing epistemic modality. But unlike PROBABLE, it does not express any estimation as to the degree of likelihood of a proposition. In Mao Naga, a degree of likelihood is expressed by another suffix, namely, *-amolo* (which is labeled as 'Dubitative' in Giridhar 1994: 308-309; see section 5.2.6 on PROBABLE):

(5.114) pfo ta-**amoloe**.
he go-may/might
'He may/might go.'
(Giridhar 1994: 309)

Although HYPOTHETICAL is not differentially marked in English, it can be identified in utterances like (5.115) and (5.116) below. The second example involves the designation of this category by the adjectival predicate *possible*:

(5.115) He may have died or not. (e.g., I have no idea)

(5.116) It is possible that he died. (e.g., I have no idea)

HYPOTHETICAL is involved in directive utterances and in most statements of wish (other than counterfactual ones, which express negated certainty). All of the following sentences, besides signaling the volitional anchoring category WANTED, entail HYPOTHETICAL as a non-prominent epistemic category. They do not specify any particular epistemic evaluation for the future action they designate, but only presuppose mere possibility as to its occurrence:

(5.117) I wish he comes with us.

(5.118) Stay here!

(5.119) Can you open the window?

5.2.4 INFERRED

INFERRED is a typical evidential category; it expresses a definitive conclusion on the basis of immediate evidence. By definition, ıt entails NEW INFORMATION in its semantic constitution. Hence, just like NEW INFORMATION alone, it may or may not entail an element of surprise.

In his discussion of the Hare (Athapaskan) particle *lõ,* DeLancey (1997: 38-40, 2001: 375-378) gives an example of a definitive (certain) inference. The sentence in (5.120) is appropriate if the speaker has actually witnessed a bear's walking around at the specified location. But in a context in which "a speaker has just come out of the house in the morning and finds bear tracks around the door", she would utter the inferential sentence in (5.121) (The particle *lõ* has uses other than inference. In addition to 'hearsay', it can convey 'mirativity' without inference when used with imperfective verbs; see NEW INFORMATION in section 5.2.1):

(5.120) júhye sa k'ínayeda.
hereabout bear SG.go.around/3SG.SUBJ/PERF
'There was a bear walking around here.'
(DeLancey 2001: 375)

(5.121) júhye sa k'ínayeda **lõ**.
hereabout bear SG.go.around/3SG.SUBJ/PERF **lõ**
'I see there was a bear walking around here.'
(DeLancey 2001: 375)

The Turkish marker *-mIş*, in addition to its other uses, typically expresses inference (see, e.g., Slobin & Aksu 1982, Johanson 2003, and section 8.1.2 in the current work). For instance, a speaker of Turkish would use *-mIş* in the inferential context described for (5.121) above:

(5.122) Burada bir ayı yürü-**müş**.
here a bear walk-**mIş**
'(I understand that/ it turns out that) There was a bear walking around here.'

English has no grammatical marker for INFERRED. The English auxiliary *must* is sometimes taken as involving evidentiality (see, e.g., van der Auwera & Plungian 1998, Palmer 2001: 34-35). Although *must* can be used for 'non-definitive' inferences (see CONJECTURED in section 5.2.5 for such evidential uses of *must*), it is not used for expressing 'definitive' conclusions. For instance, in the context given for (5.121) and (5.122) above, an English speaker who is certain that the footsteps are of a bear would utter (5.123) rather than (5.124):[77]

(5.123) A bear has walked around here.

(5.124) A bear must have walked around here.

Below are some examples of grammatical markers of INFERRED. (5.125) illustrates the Mao Naga (Tibeto-Burman) marker *-ahi*, characterized by Giridhar (1994: 338) as conveying 'virtually infallible' inferences. Aikhenvald (2003b: 135) illustrates the 'specific inferred' marker in Tariana (Maipuran) with the sentence in (5.126), which can be uttered in a context where the speaker "saw Cecília with a stick in her hand, and the scarred dog running away" (*ni-hka* is the recent past form of 'specific inferred'):

[77] van der Auwera & Plungian (1998: 85-86) equate 'inferential evidentiality' with 'epistemic necessity' (see also Plungian 2001: 354). These two dimensions are distinguished in the current framework: Epistemic necessity (PROBABLE/high/; see section 5.2.6) expresses a less-than-certain judgment without expressing any evidential dependency. And an evidential utterance may involve either categorical certainty (INFERRED; see section 5.2.4) or less-then-certainty (CONJECTURED; see section 5.2.5). While van der Auwera & Plungian (1998: 85-86) take English *must* as expressing a single semantic category in which inference and epistemic necessity overlap, *must* is identified here as expressing either epistemic necessity (PROBABLE/high/) or a non-certain inference (CONJECTURED) in different contexts.

(5.125) pfano idu rü-oTi-**ahi**.
he yesterday write-IRRELEVANT-**INFERRED**
'He must have written yesterday.'[78]
(Giridhar 1994: 338; cited in Bhat 1999: 69)

(5.126) Ceci tʃinu-nuku du-kwisa-**nihka**.
Cecília dog-TOP.NON.A/S 3SGF-scold-**SPEC.INFR.REC.P**
'Cecília scolded the dog.' (I infer it on the basis of obvious evidence).
(Aikhenvald 2003b: 135)

An utterance can signal, in addition to the existence of some evidence, the sensory type of the evidence. Such utterances can fit the schematic definition of INFERRED, as they index the existence of sensory evidence (they will match CONJECTURED if the conclusion is signaled as uncertain). The type of evidence (or, mode of perception) can be indicated by an explicitly designated perception verb, as in the English examples (5.127) and (5.128) below. It can also be specified by an adverbial constituent, as in (5.129). Languages may also possess grammatical markers for different modes of perception. For instance, the evidential marking in the Foe (Trans-New Guinea) sentence in (5.130) indicates that the speaker 'sees' the coming of an airplane (Rule 1977: 71-74; cited in Aikhenvald 2004). Similarly, Aikhenvald (2004: 37) (with reference to Linn 2000 and Mithun 1999: 571) reports that the Euchee (isolate, USA) sentence with 'auditory evidential' marking given in (5.131) "can be rephrased with a lexical verb 'hear' ".[79]

(5.127) I can see that he is very tired.

(5.128) I hear him approach.

(5.129) As I can see, he is very tired.

(5.130) aiya bare wa-**boba'ae**.
air plane come-**VIS.EV**
'An airplane is coming.' (can see it: VISUAL)
(Rule 1977; Aikhenvald 2004: 62)

[78] Giridhar and Bhat translate this sentence using *must*, as is often done in rendering inferential sentences into English. But phrases such as *it turns out that* or *I now realize that* are more appropriate for such definitive (infallible) inferences.

[79] The Foe and Euchee examples here represent relatively clear cases of grammatical marking of the sensory type of evidence. As already mentioned under CERTAIN (section 5.2.2), many examples of 'visual paradigm' in the evidentiality literature are not clear as to whether they unequivocally specify the mode of perception as 'visual' or just express a contingent, personal certainty (i.e., CERTAIN here). Similarly, some examples of 'non-visual sensory' or 'auditory' marking in the literature may well turn out to express a non-definitive conclusion on the basis of partial or unclear evidence (i.e., CONJECTURED) without indicating any specific mode of perception.

(5.131) ʻahe ʻi-gō-**ke**.
here 3sg.ACTOR-come-**AUD.EV**
ʻThey are coming (I hear them).ʼ
(Aikhenvald 2004: 37)

In the grammatical expression of INFERRED, the conventionally implied evidence can be a very direct indication of the expressed conclusion. For instance, the appearance of a person can be construed as evidence for that person's having come, a feeling of taste for a dish's being delicious, a sensation of pain for one's having cut one's finger, etc. Such utterances will be taken as signaling INFERRED (based on direct evidence) rather than (just) NEW INFORMATION if they indicate that the speaker has discovered something that has been manifest for some time 'only now' (i.e., if they signal a recent change in the knowledge state, or a component of 'I-didn't-know-before'). This is because such an indication points to a (however minimal) process of reasoning from a piece of evidence to a conclusion, which fits the definition of INFERRED rather than that of NEW INFORMATION. This subtype of INFERENCE, which involves 'direct' or 'unmediated' evidence, will be represented here as INFERRED/direct/.

The uses of Turkish suffix *-mIş* identified by Slobin & Aksu (1982) as expressing 'surprise' nicely illustrate INFERRED/direct/. For instance, (5.132) can be uttered in a context where "the speaker hears someone approach, opens the door, and sees Kemal - a totally unexpected visitor" (Slobin & Aksu 1982: 187). Similar utterances are illustrated in Laprade (1981) and in Faller (2002). Laprade (1981: 223-224) illustrates the use of 'pluperfect' in Spanish dialect of Paceño in conveying "surprise and nonpersonal knowledge upon encountering an unknown or something seen for the first time that occurred without one realizing it" (Laprade 1981: 223; see also Fleischman 1989: 28-30). One of Laprade's examples is replicated in (5.133) below. Similarly, Faller (2002: 31) exemplifies the use of the Cuzco Quechua (Quechuan) 'past participle' suffix *-sqa* in a context in which the speaker is "surprised at finding out" that Marya is there (5.134):

(5.132) Kemal gel-**miş**!
Kemal come-**mIş**
ʻKemal came.ʼ
(Slobin & Aksu 1982: 187)

(5.133) Me **había** cort**ado** mi dedo.
ʻOh! I cut my finger! (I hadn't realized)ʼ
(Laprade 1981: 224; cited in Fleischman 1989: 29)

(5.134) Kay-pi-má ka-sha-**sqa** Marya-qa.
this-LOC-má be-PROG-**sqa** Marya-TOP
'Marya is here.'
(Faller 2002: 31)

Friedman's (2003: 197, 200) examples for the Albanian admirative (which "expresses surprise at unexpected new information based on immediate observation") and for the Macedonian *l*-past, replicated in (5.135) and (5.136) below, also fit the definition of INFERRED/direct/ (with surprise) rather than just NEW INFORMATION, as they conventionally signal a component of 'I-didn't-know-before'. Most of the 'mirative' examples in DeLancey (1997, 2001) are similar. For instance, the Hare (Athapaskan) sentence with *lõ* in (5.137) can be uttered by a speaker who "has just gone to Mary's house and found her working on a hide, with no prior expectation of that being the case" (DeLancey 1997: 39). Similarly, a speaker of Lhasa Tibetan (Tibeto-Burman) "who reaches into his pocket and discovers money that he didn't know he was carrying" (DeLancey 1997: 44) would use the existential copula *'dug* (5.138) (rather than *yod*) in order to signal that he has just discovered something that he did not know before:

(5.135) Ti kërcye-**k**-e shumë mirë!
you dance-**ADM**-PRES-2SG very well
'You dance very well!'
(August 1995; cited in Friedman 2003: 197)

(5.136) Ti si bi-l Rom! Ne sum znae-**l**!
you be+PRES+2SG Rom NEG be+PRES+1SG know-**L+MASC**
'You're a Rom! I didn't know!'
(Friedman 2003: 200)

(5.137) Mary e-wé' ghálayeda **lõ**.
Mary its-hide work.IMPF **lõ**
'Mary is working on hides.'
(DeLancey 1997: 39)

(5.138) nga-r dnugul tog=tsam **'dug**.
I-LOC money some **exist**
'I have some money.' (quite to my surprise)
(DeLancey 1997: 44)

As can be seen in the examples above, INFERENCE mostly combines with the temporal categories ANTERIOR, PERFECT or SIMULTANEOUS. This is simply because direct or indirect evidence mostly comes from the perception of what has already happened or happening at the time of

utterance.[80] But INFERRED can also combine with other temporal categories, as seen in the Paceño Spanish sentence below, which includes a 'habitual' (ATEMPORAL) content (Laprade 1981: 224; cited in Fleischman 1989: 30):

(5.139) **Habían** sab**ido** fumar.
*'They **do** smoke (I just found out).'*
(Laprade 1981: 224; cited in Fleischman 1989: 30)

The conclusion expressed by INFERRED can be totally contrary to what the speaker had known before. Some languages have special strategies which emphasize such an element of contrariness. One example is the combination of 'Inferential II' *-bi-* and 'Absolutive' *-w* in Kashaya (Hokan) (5.140) (Oswalt 1986; cited in Palmer 2001: 55). Similarly, the Turkish sentence initial particle *meğer* 'to my surprise', used in addition to *-mIş*, emphasizes contrariness to the previous knowledge state, as illustrated with Taylan's (2000) example in (5.141):

(5.140) kʰe hí?baya=?-**bi-w.**
my man-ASS-**INF-ABSOL**
'It turned out to be my man.'
(Oswalt 1986: 42; cited in Palmer 2001: 55)

(5.141) **Meğer** o ne kadar akıllı-**ymış**.
to.my.surprise (s)he how much smart-**EPASTe**
'How smart he is!'
(Taylan 2000: 135)

Grammatical markers of INFERRED are often polysemous and may include 'resultative', 'perfect', 'mirative' and 'hearsay' in their semantic ranges (see, for instance, Bybee, Perkins & Pagliuca 1994: 95-97, and various contributions in Johanson & Utas 2000 and in Aikhenvald & Dixon 2003). In the present framework, 'hearsay' (i.e., second-hand linguistic information, often also labeled as 'report' or 'quotative') is distinguished from INFERRED and other evidential categories. Conditions of use of 'hearsay' and INFERRED can be similar, and many languages grammatically express both dimensions in the same way. But while INFERRED involves the speaker's own reasoning in reaching a conclusion (on the basis of immediate evidence) 'hearsay' only transmits what she has heard from another illocutionary source (with or without an element of commitment). Hence, from a purely semantic perspective, 'hearsay' is not an evidential category. In section 6.2.3 it will be analyzed as a specific type of volitional displacement, on a par with indirect or reported speech.

[80] See Nichols (1986: 254-256), who proposes a universal covariance between 'perfective' (past) and 'inferential' on the one hand, and 'imperfective' (present) and 'immediate' on the other.

5.2.5 CONJECTURED

CONJECTURED expresses a non-definitive (uncertain) conclusion on the basis of immediate evidence. While in INFERRED the evidence is full or clear (hence leads to a CERTAIN conclusion), in CONJECTURED the evidence is partial or non-clear (so that the conclusion remains essentially HYPOTHETICAL).

In English, CONJECTURED generally appears as a designated anchoring relation, e.g., with the impersonal predicates *appear* or *seem* (5.142 and 5.143). It can also be specified with adverbs like *seemingly* or *apparently* (5.144):[81]

(5.142) It seems/appears that Mary left long ago. (e.g., after inspecting Mary's room)

(5.143) John seems to/appears to have failed the exam. (e.g., upon noticing John's bad temper)

(5.144) Apparently/seemingly, John failed the exam. (e.g., upon noticing John's bad temper)

A grammatical marker of CONJECTURED (like one of INFERRED) may signal the type of sensory evidence (e.g., visual, auditory, tactile etc.) in addition to the existence of a piece of evidence. For instance, the 'uncertain visual' marker *-caqi* in the Makah (Wakashan; extinct) sentence in (5.145) (from Palmer 2001) conveys a less-then-certain judgment, specifying the mode of perception for the evidence as 'visual':

(5.145) čapac**caqi**l.
'It looks like a canoe'.
(Palmer 2001: 50)

The English auxiliary *must* is mostly used to convey a high degree of probability, without specifically indexing any piece of evidence (see PROBABLE in section 5.2.6). But it can also be used in contexts where immediate, circumstantial evidence strongly (but not definitively) points to a conclusion. DeLancey (2001) exemplifies the use of *must* in an evidential context:

(5.146) He must have gotten lost. (e.g. "of someone who has failed to show up when expected".)
(DeLancey 2001: 370)

The meaning conveyed by the Cuzco Quechua (Quechuan) enclitic-particle combination *-chu hina*, discussed in Faller (2002: 173-176), also fits the anchoring category CONJECTURED as defined here.[82] Like *-chá* (see example (5.169) in section 5.2.5), *-chu hina* indicates a less-than-certain conclusion. But unlike *-chá*, it also indexes the existence of immediate evidence. For instance, a Cuzco Quechua speaker who uses a pair of binoculars to scan a village may utter (5.147) "if (s)he is

[81] *Apparently* may indicate a 'definitive' judgment too (i.e., can be used in the sense of *evidently* or *obviously*). In such cases it should be analyzed as expressing INFERRED rather than CONJECTURED.

[82] Faller (2002) labels *-chá*, and not *-chu hina* as a 'conjectural enclitic'. Here I identify *-chu hina* as conveying CONJECTURED. This is only a terminological discrepancy.

too far away to get a clear view even with binoculars, […] in order to indicate that (s)he has direct, but unclear evidence" (Faller 2002: 175). Similarly, (5.148) can be uttered, e.g., when the speaker thinks she has recognized Marya's step on the stairs:

(5.147) Mario-qa wasi-n-ta-**chu hina** llinphi-sha-n.
Mario-TOP house-3P-ACC-**chu hina** paint-PROG-3P
'Mario is painting his house.'
(Faller 2002: 175)

(5.148) Chay-qa Marya-**chu hina**.
this-TOP Marya-**chu hina**
'This appears to be Marya.'
(Faller 2002: 175)

The Mao Naga (Tibeto-Burman) marker *le*, in combination with *-oTi*, also seems to mark CONJECTURED as defined here. Unlike *-ahi*, which can be used for definitive conclusions (see example (5.125) in section 5.2.4), it conveys a weak inference in a context where the evidence is not 'infallible' or 'reliable' (Giridhar 1994: 338; cited in Bhat 1999: 69-70):

(5.149) pfano idu rü-**oTi** **le**.
he yesterday write-**IRRELEVANT** **IRREALIS** (Glosses from Bhat 1999)
'He must have written yesterday.'
(Giridhar 1994: 337; cited in Bhat 1999: 69)

Another marker which appears to express CONJECTURED is the Western Apache (Athapaskan) particle *golnīī*. de Reuse (2003: 81-82) identifies it as a 'non-mirative inferential' particle and comments that it is often translated into English as 'I think', 'it seems like', or 'apparently'. He illustrates it with "a statement by a father inferring on his children's wishes":

(5.150) Chaghą́shé doo áku nádabini' da **golnīī**.
children NEG there 3PL.want.to.go.back NEG **INF.NON.MIR**
'I think the children do not want to go back there.'
(de Reuse 2003: 81-82)

5.2.6 PROBABLE

PROBABLE expresses an estimation of likelihood. It can present a proposition vaguely as likely or signal a more fine-tuned probability ranging from very unlikely to virtually certain. It hence closely matches the traditional category 'epistemic modality'.

PROBABLE is a non-evidential category, because it does not specifically index (neither directly express nor imply) the existence of any piece of evidence. It is rather based on the speaker's general

knowledge, observation of regular occurrences, previous assumptions, or expectations. In this respect, PROBABLE is associated with Palmer's (1986) class of 'judgments' (Palmer 1986: 57-66) rather than that of 'evidentials' (Palmer 1986: 66-76).

PROBABLE was defined in section 5.2.6 as expressing a quantificational value over a range of thoughts close to the epistemic center (the current knowledge state). This may sound counterintuitive at first, since it would be natural to think that an expression of epistemic possibility or necessity expresses 'just one thought' rather than a range of thoughts. But the definition captures the fact that when a speaker presents a proposition as 'probably true', she allows not only epistemic representations of the world (thoughts) in which the proposition holds but also those in which it does not hold.[83]

Different languages may grammatically partition the scale of probability differently. One often finds an opposition between relatively low (or medium) and relatively high degrees of probability (i.e., 'epistemic possibility' and 'epistemic necessity'). This opposition, captured here as PROBABLE/low/ (or PROBABLE/medium/) vs. PROBABLE/high/, is expressed by the auxiliary verbs *may* and *must* in English:

(5.151) John may have failed the exam.

(5.152) John must have failed the exam.

In English, PROBABLE can also be expressed with epistemic adverbs, e.g., with *probably* as in (5.153) below. It also takes part in the meanings of mental state predicates such as *think*, *suppose*, or *assume* (5.154) or predicative adjectives such as *likely*, *unlikely*, or *probable* (5.155):

(5.153) She has probably left

(5.154) I think/assume/suppose she has left.

(5.155) It is unlikely/probable/likely that she has left.

In what Dancygier (1993, 1998) calls 'predictive conditionals' in English, *will* (or its past form *would*) conveys a high degree of probability in combination with future time reference, as shown in (4-6) below. Within the current framework, the apodoses of these sentences are analyzed as

[83] This idea of 'quantification over a range of thoughts' is basically similar to the idea of 'quantification over possible worlds' in modal logic, where the modal value of a proposition is expressed in terms of the possible worlds in which it is true and those in which it is false (e.g., Hintikka (1962), Kripke (1963), Lewis (1986) in philosophical logic, Kratzer (1981, 1991) in linguistics). The current account differs from that of 'possible words' in the way it approaches linguistic meaning: It characterizes meaning in an intensional way (with reference to the speaker's cognitive states) rather than extensionally (it in terms of truth values defined by relations of correspondence to objectively defined 'models' of reality). Instead of 'possible worlds', the present framework speaks of subjectively construed 'temporal locations' (that contain various 'SoAs'), 'thoughts' (that contain various 'propositions') and 'projections' (that contain various 'reflections').

signaling the combination of POSTERIOR with PROBABLE/high/ (relative to a hypothetical (5.156), an unlikely (5.157), and a counterfactual epistemic frame (5.158)):

(5.156) If it rains, the match will be cancelled. (Dancygier 1993: 405)

(5.157) If it rained, the match would be cancelled. (Dancygier 1993: 405)

(5.158) If it had rained, the match would have been cancelled. (Dancygier 1993: 405)

Will, in its predictive use, can appear in independent sentences too, as in (5.159) below. It can even be used in estimations which do not refer to the future (5.160). In such cases it is analyzed as signaling PROBABLE/high/ without POSTERIOR:

(5.159) (Don't worry.) He will come back.

(5.160) This will be John. (e.g., upon hearing someone ringing the doorbell).

Languages may recruit grammatical strategies for modulating degrees of probability. One example is the English past morphology. In their epistemic senses, *might* and *could* are weaker than *may*; *would* is weaker than *will*; and *should* and *ought to* are weaker than *must* (see, e.g., Coates 1983, Palmer 2001: 203-204).

A language may also possess a grammatical marker which can be used for any degree of epistemic modality. The Wintu (Penutian) 'expectational' marker *-ʔel* (Schlichter 1986: 52-53; identified in Palmer 2001: 29-30 as an 'Assumptive' marker) appears to be such a general marker of PROBABLE (in addition to its use for 'hearsay'; see Schlichter 1986: 53) (5.161, 5.162). The Turkish enclitic *-DIr* is similar, in that in can also signal different degrees of likelihood (5.163):

(5.161) Tima min-**ʔel** pira·-**ʔel**.
cold die-**EXPECT** starve-**EXPECT**
'He might freeze to death, he might starve (its cold and he's alone, helpless, sick).'
(Schlichter 1986: 52; cited in Palmer 2001: 30)

(5.162) ʔimto·n nuqa·-**ʔ-l**.
berries ripe-**EXPECT**
'The berries must be ripe (it's that time of the year).'
(Schlichter 1986: 52; cited in Palmer 2001: 30)

(5.163) (bir ihtimal-le / belki / mutlaka) gel-miş-**tir**.
one probability-COM maybe absolutely come-EPAST-**JDGe**
'(S)he might have come / she may have come / she must have come.'

Other examples of PROBABLE include the Tuyuca (Tucanoan) paradigm labeled 'assumed' in Barnes (1984: 257) and 'Assumptive' in Palmer (2001: 29) (5.164), the Ladhaki (Tibeto-Burman) suffix *-cen* which is described in Koshal (1979: 193) and in Bhat (1999: 72) as expressing a 'probable event' (5.165), the Mao Naga (Tibeto-Burman) suffix *-amolo* which is labeled as 'Dubitative' in Giridhar (1994: 308-309) (5.166) and the Mapuche (Araucanian) particle *chi* which is also taken as a marker of 'dubitative' in Hengeveld (2004: 1197) (5.167):

(5.164) díiga apé-**hĩyi**.
soccer play+3sg+PAST-**ASSUM**
'He played soccer. (It is reasonable to assume that he did.)'
(Barnes 1984: 257; cited in Palmer 2001: 29)

(5.165) kho-ə thore ŋe ə-čo thuk-**cen**.
he-ERG tomorrow my brother-DIR meet-**may**
'He is likely to meet my brother tomorrow.'
(Koshal 1979: 193; cited in Bhat 1999: 72)

(5.166) pfo ta-**amoloe**.
he go-**may/might**
'He may/might go.'
(Giridhar 1994: 309)

(5.167) Amu-y **chi**.
go-DECL.3 **DUB**
'Maybe he went away.'
(Smeets 1989: 431; cited in Hengeveld 2004: 1197)

Suppositions, guesses, or assumptions which do not specifically index any immediate evidence are sometimes discussed in connection with evidentiality, and identified as expressing 'inference' from general knowledge or expectations. For instance, Aikhenvald (2003b: 135-140) labels the Tariana (Maipuran) markers *-si-ka* (in recent past), and *-si-na* (in remote past) as 'generic inferred'. Accordingly, she identifies the sentence in (5.168), uttered in a context where the speaker sees a dog "looking abashed and hiding from people", as expressing an "inference based on general knowledge about how dogs behave". Another example is the Cuzco Quechua (Quechuan) 'conjectural enclitic' *-chá*. Although Faller (2002: 176-179) states that *-chá* is used when "the speaker bases a statement on his or her own reasoning", and identifies its modal value as 'possibility', she nevertheless takes it as an evidential marker.[84] One example is replicated in (5.169) below, which could be used when the speaker "was expecting Marya for about that time, which would allow

(the speaker) to reason that it must be her at the door" (Faller 2002: 176-177). Both sentences would be taken as expressing PROBABLE within the current framework, since they make guesses on the basis of general knowledge or expectations without specifically indexing any piece of immediate evidence:

(5.168) Ceci tʃinu-nuku du-kwisa-**sika**
Cecília dog-TOP.NON.A/S 3SGF-scold-**REC.P.INFR**
'Cecília scolded the dog. (I inferred it)'
(Aikhenvald 2003b: 135)

(5.169) Chay-qa Marya-**chá**.
this-top Marya-**chá**
'This is probably/must be Marya.'
(Faller 2002: 175)

PROBABLE can be identified as a primary semantic focus in the semantic ranges of grams identified as conveying 'epistemic possibility' and 'probability' in Bybee, Perkins & Pagliuca (1994: 206-207).

5.2.7 GENERAL FACT

GENERAL FACT presents a proposition as an item of general knowledge rather than as a matter of contingent, personal certainty. As such, it conveys a sense of strong factuality. Its most typical manifestations include expressions of scientific information, encyclopedic knowledge and culturally acknowledged information.

The semantic enclosure of GENERAL FACT overlaps with what Faller (2002) calls 'encyclopedic information' (as opposed to 'personal information'), which "includes knowledge that is taken for granted within a culture, and knowledge that is typically taught in school or found in encyclopedias" (Faller 2002: 18).

The following Sherpa (Tibeto-Burman) examples from Woodbury (1986) illustrate the opposition between the affixes *-nok* and *-wi* and that between the etymologically related linking verbs *'nok* and *'wayi*. Woodbury (1986: 191-192) identifies their values in these examples as +EXPERIENTIAL (5.170 and 5.172) and -EXPERIENTIAL (5.171 and 5.173), respectively. Within the framework of anchoring categories, this epistemic opposition is taken as one between personal, contingent knowledge (CERTAIN) and general knowledge (GENERAL FACT):

[84] Faller's definition of evidentiality is wider than the one adopted here, as it does not require an actual reference to a piece of evidence (e.g., by direct expression or by conventional implication).

(5.170) ḍaa saa-p mi ti yembur-laa de -ki-**nok**.
rice eat-NOMNLZR man be Katmandu-DAT stay-**HE**
'The man who is eating rice lives in Katmandu.' (I see, have seen…)
(Woodbury 1986: 191)

(5.171) ḍaa saa-p mi ti yembur-laa de -ki-**wi**.
rice eat-NOMNLZR man be Katmandu-DAT stay-**GN**
'The man who is eating rice lives in Katmandu.' (It is known…)
(Woodbury 1986: 191)

(5.172) di khaŋb-i naŋ-laa pye **nok**.
this house-GEN inside-DAT rat **LINK**
'This house has rats.' (I see, have seen …)
(Woodbury 1986: 192)

(5.173) di khaŋb-i naŋ-laa pye **wayi**.
this house-GEN inside-DAT rat **LINK**
'This house has rats.' (It is known …)
(Woodbury 1986: 192)

The 'general knowledge' suffix *-ʔma* in Central Pomo (Hokan; nearly extinct), illustrated in (5.174) (Mithun 1999: 191; cited in Palmer 2001: 6, 66-67), seems to be a specific marker of GENERAL FACT. It expresses a stronger sense of factuality compared to both the formally unmarked option (5.175) and the 'first-hand personal experience' (usually 'visual') marker *-ya* (5.176):

(5.174) čʰéemul-**ʔma**.
rain fell-GEN.KNOW
'It rained.' (that's an established fact)
(Mithun 1999: 191; cited in Palmer 2001: 6)

(5.175) čʰéemul.
rain fell
'It rained.'
(Mithun 1999: 191; cited in Palmer 2001: 6)

(5.176) čʰéemul-ya.
rain fell-VIS
'It rained.' (I saw it).
(Mithun 1999: 191; cited in Palmer 2001: 6)

English does not possess any grammatical strategy which distinguishes strong factuality (GENERAL FACT) form contingent certainty (CERTAIN). But the following statements can be analyzed as signaling GENERAL FACT in the given minimal contexts:

(5.177) Whales use a complex communication system. (e.g., by an expert on whales)

(5.178) Homo sapiens evolved about 120.000 years ago. (e.g., in a scientific speech)

(5.179) World War II began in 1944. (e.g., by a teacher in a classroom)

Krifka (1999) tends to characterize 'generic sentences' primarily as expressing established facts with general validity rather than temporal unrestrictedness. For example, he takes both (5.180) and (5.181) as 'generic' sentences, although the former expresses anteriority in the temporal domain. In the semantic space of anchoring relations proposed here, what these two sentences share is epistemic generality (GENERAL FACT), not temporal generality (ATEMPORAL):

(5.180) The banana was brought from the Canary Islands to the New World. (Krifka 1999: 170)

(5.181) A banana contains vitamins A and C. (Krifka 1999: 170)

Markers used in expressing ATEMPORAL (section 5.1.7) often also include GENERAL FACT in their semantic ranges, because items of general knowledge mostly involve temporally unrestricted SoAs. For instance, in Kornfilt's (1997: 377) Turkish example which expresses a "definitional truth" (5.182), the suffix *-DIr* expresses ATEMPORAL and GENERAL FACT cumulatively. But *-DIr* can also appear in a past- or future-oriented sentence to emphasize the factuality of a proposition, as seen in Sansa's (1986) examples in (5.183) and (5.184):

(5.182) Balina memeli bir hayvan-**dır**.
whale mammal a animal-**DIr** (glosses mine)
'A whale is a mammal.'
(Kornfilt 1997: 377)

(5.183) İnsan doğa-nın iç-i-ne sıkı sıkıya yerleş-miş-**tir**.
man nature-GEN inside-POSS-ACC tightly install-EPAST-**DIr**
'Man is installed in nature tightly.'
(Sansa 1986: 147)

(5.184) Işık o ayna-ya, o ayna-dan da ikinci ayna-ya yansı-yacak-**tır.**
light that mirror-DAT that mirror-ABL CONJ second mirror-DAT reflect-FUT-**DIr**
'The light will reflect on that mirror and from that mirror to the second one.'
(Sansa 1986: 149)

The epistemic category GENERAL FACT characterizes the philosophical, the scientific, and the historical discourses. It can also be identified in ordinary conversation when a speaker wants to reinforce the factuality of the information she conveys.

5.3 Volitional Anchoring Categories

The list below gives the characterizations of the basic volitional anchoring categories in usage-based terms, on the basis of their definitions in terms of relative qualifications of 'projections' given in section 4.1. In the context of an utterance,

- IMMEDIATE CONTRIBUTION expresses a reflection which stems from the speaker's will in a specific communicative context. In other words, it directly conveys the speaker's immediate (illocutionary) intentions.
- ACCEPTED presents a reflection as one which is acknowledged to be real.
- ENVISIONED presents a reflection as one which is in the realm of imagination, rather than as one which is part of the accepted reality.
- ASSERTED makes an intentional contribution to the communicative context by expressing a reflection that the speaker takes as real.
- WANTED makes an intentional contribution to the communicative context by expressing the speaker's desire for the realization of an envisioned reflection.
- ACCEPTABLE presents a reflection as consented (or, conceded) to some degree rather than as fully accepted.
- GENERAL STATEMENT voices a general announcement of an impersonal (social or institutional) authority, rather than making a personal assertion tied to the will of an individual in a specific communicative context.

Here is an outline of how the volitional anchoring categories contrast to each other: ACCEPTED qualifies a certain representation of the world (a projection) as real (relative to the speaker). ENVISIONED is its opposite; it presents a projection as non-real (i.e., as merely imagined). ASSERTED entails an ACCEPTED projection, but makes an intentional contribution to the communicative context (i.e., also conveys IMMEDIATE CONTRIBUTION). Similarly, WANTED entails ENVISIONED, but in addition to expressing an imagined projection, it also conveys a specific illocutionary (immediate) intention of the speaker (again, by also conveying IMMEDIATE CONTRIBUTION). IMMEDIATE CONTRIBUTION (as used on its own) differs from ASSERTED and WANTED in that it entails neother an ACCEPTED nor an ENVISIONED projection. Hence, utterances which signal IMMEDIATE CONTRIBUTION at the highest layer of their main clauses do not describe anything as true or false in the actual world, nor do they articulate any wish; they only make a certain contribution to the immediate

conversational context by dint of the immediate illocutionary act. GENERAL STATEMENT is like ASSERTED in that it too renders descriptive utterances. But unlike ASSERTED, it does not establish any relevance to any volitional center. As such, it appears in official or institutional discourse rather than in contexts of personal communication. ACCEPTABLE is different from ASSERTED in that it only conveys that the speaker concedes that a certain reflection can be accepted as real, rather than willfully asserting it as a personal opinion.

The appearance of the volitional anchoring categories in finite sentences can only be understood in the light of the communicative constraint given in section 4.13, which basically says that every utterance in personal communication has to convey the speaker's immediate (illocutionary) intentions. ACCEPTED and ENVISIONED cannot be signaled on their own in a main clause, since they do not express any illocutionary intention by themselves. ACCEPTABLE too, cannot be signaled in the highest layer of anchoring in a main clause, because it only indicates that a message is assertable, rather than presenting the speaker's original, personal contribution.

Utterances which signal IMMEDIATE CONTRIBUTION in their highest layer of anchoring directly transmit an immediate (illocutionary) intention of the speaker by virtue of linguistic conventions. But, as stated in section 4.4.2, when ASSERTED or WANTED are grammatically expressed (e.g., respectively, in descriptive and directive utterances), the speaker's immediate intentions are not explicitly conveyed, but conventionally implied. This means that in such utterances the recovery of the speaker's immediate (illocutionary) intention involves context-sensitive inferences.

5.3.1 IMMEDIATE CONTRIBUTION

IMMEDIATE CONTRIBUTION expresses the speaker's immediate (illocutionary) intentions in a specific communicative context. It is different from ASSERTED in that it does not entail any ACCEPTED projection (i.e., one which is already taken as part of reality). In other words, it does not present anything as true, false or possible, but only makes a certain contribution to the immediate conversational context by 'creating' a projection on the spot. Utterances which signal IMMEDIATE CONTRIBUTION in the highest layer of anchoring include declaratory utterances, expressive utterances, utterance-level interjections, and explicit performatives.

As Searle (1975a) makes clear, 'declarations' cannot be said to be true or false of the actual world, since they do not describe any existing event or state. They are rather used for bringing about the state of affairs they designate (and their success generally depends on the social or institutional status of the speaker). Some examples are given below:

(5.185) You are fired. (e.g., by the employer) (Searle 1975a: 17)

(5.186) The meeting is closed. (e.g., by the chairperson of a meeting)

(5.187) The accused is innocent. (e.g., by a judge)

Expressive utterances (5.188, 5.189, 5.190) and some utterance-level interjections (5.191, 5.192, 5.193) are similar to declarations in that they do not express a SoA as true, false, possible, likely, etc. They rather make a personal contribution to the communicative context by directly reflecting the speaker's immediate intention. Different from declaratory utterances, expressive utterances and utterance-level interjections are typically 'elliptical', i.e., what the speaker intends to do is not designated as a fully explicit predication:

(5.188) Thank you.

(5.189) Congratulations.

(5.190) I'm sorry.

(5.191) (You) idiot!

(5.192) Fuck you!

(5.193) Damn it!

Explicit performatives constitute a special type of declaratory utterances: They aim to bring about the illocutionary act designated in the utterance. Different from other declaratory utterances, they *designate* the speaker's immediate (illocutionary) intention (not the contents of the intention as in regular declaratives, but the intention itself). As such, they amount to declarations of speaker's immediate intentions:[85]

(5.194) I name this ship the Queen Elisabeth. (Austin 1962: 5)

(5.195) I apologize (for…). (Austin 1962: 71)

(5.196) I promise to come on Wednesday. (Searle 1989: 158)

(5.197) I order you to leave the room. (Searle 1989: 158)

While assertive and directive illocutionary acts can be described with utterances which include subjunctive or indicative subordination (as in (5.198) and (5.199) below), an illocutionary act in which IMMEDIATE CONTRIBUTION is signaled as the highest layer of anchoring cannot. This is simply because, unlike assertions and directive utterances, they do not entail any ACCEPTED nor ENVISIONED projection. This is illustrated below for declaratory utterances (5.200, 5.201), expressive utterances (5.202, 5.203), interjections (5.204, 5.205) and explicit performatives (5.206, 5.207). In explicit performatives, the complementizers *that* or *to* may appear in the illocutionary act description only if they already make part of the original message, as in (5.208) and (5.209):

[85] Note that this analysis is consistent with Searle's (1989) contention that explicit performatives are declarations.

(5.198) John is a hard worker.

-> *S said/stated/claimed/confirmed/admitted that John was a hard worker.*

(5.199) Go with them!

-> *S advised/ ordered/requested/pleaded H to go with them.*

(5.200) You are fired.

-> *S fired H.*

(5.201) The meeting is closed!

-> *S announced the meeting closed/closed the meeting.*

(5.202) Thank you.

-> *S expressed thanks/showed gratitude.*

(5.203) Congratulations.

-> *S congratulated H.*

(5.204) Fuck you!

-> *S swore at H / S offended H.*

(5.205) Hurray!

-> *S expressed her appreciation/joy.*

(5.206) I name this ship Queen Elisabeth.

-> *S named the ship Queen Elisabeth.*

(5.207) I pronounce you husband and wife.

-> *S pronounced Hs husband and wife.*

(5.208) I maintain that the results are unreliable.

-> *S maintained that the results are unreliable*

(5.209) I order you to stop the machine.

-> *S ordered H to stop the machine.*

A similar observation was already made by Searle (1975: 15-16), who shows that subordination by *that* is not possible in the performative formulations of expressive illocutionary acts:

(5.210) I apologize for stepping on your toe/*I apologize that I stepped on your toe.

(Searle 1975: 15)

(5.211) I congratulate you on winning the race/* I congratulate you that you won the race.

(Searle 1975: 15)

5.3.2 ACCEPTED

ACCEPTED expresses what the speaker admits as reflecting reality. It cannot appear as the only volitional category in a main clause, because on its own, it does not make any intentional contribution to the immediate communicative context (see the constraint in 4.13). But it takes part in the compound anchoring category ASSERTED, which in turn can be signaled in a main clause (see section 5.3.4 below).

ACCEPTED can be identified in subordinate contents of the 'indicative' type, e.g., in the complements of utterances which designate assertive illocutionary acts:

(5.212) He told me [that John is sick].

(5.213) John admits that [he did not react in time].

(5.214) John claims that [Mary did her best].

(5.215) I insist that [Mary did her best].

Such 'indicative' complements are often not marked by any specific mood. But they may exhibit a formal contrast with complements marked with a distinctive 'subjunctive' marker. Such a contrast is seen in the Spanish examples below (from Bybee, Perkins & Pagliuca: 1994). The subordinate clause in (5.216) is analyzed here as one which signals ACCEPTED, and that in (5.217), ENVISIONED (see the next section):

(5.216) Dice que vienen ahora.
say:3.s that come:**IND**:3.p now
'He says they are coming now.'
(Bybee, Perkins & Pagliuca: 1994: 213)

(5.217) Dice que vengan ahora.
say:3.s that come:**SUBJ**:3.p now
'He says for them to come now.'
(Bybee, Perkins & Pagliuca: 1994: 213)

5.3.3 ENVISIONED

ENVISIONED expresses an imagined projection rather than one which is already accepted as real. Like ACCEPTED, it cannot be signaled on its own in a main clause, because it does not establish any relevance to the speaker's immediate will in itself. But it is included in the semantic constitution of WANTED, which can be signaled in a main clause (see section 5.3.5 below).

ENVISIONED appears in subordinate clauses of utterances which designate a directive illocutionary act. In English, such subordinate clauses are rendered by *to*:

(5.218) John asked [Mary to leave].

(5.219) I order [you to come here]!

(5.220) Mary obliges [John to stay home].

(5.221) Len advised [Mary to work harder].

Languages may use different strategies in distinguishing subordination of ENVISIONED contents ('subjunctive' subordination) from that of ACCEPTED contents ('indicative' subordination).[86] This may involve the use of an infinitive form (as in the above examples from English) or a special 'subjunctive' (or 'irrealis') marker. Both strategies can be used in the subordinate clauses of directive illocutionary verbs in many Indo-European languages. Below are examples from Lithuanian (5.222) (from Chung & Timberlake 1985: 249) and Italian (5.223) (from Palmer 2001: 139-140). The type of the subordinate content can also be indicated by the choice of a complementizer. For instance, *-DIG* and *-mA* in Turkish (labeled in Kornfilt 1997 as the 'factive' and 'action' nominalization markers, respectively) can function as markers of ACCEPTED (5.224) and ENVISIONED (5.225):

(5.222) Aš paprašau jo eiti namo / kad eitų namo.
I ask him go(**INF**) home / that go(**IRR**) home
'I asked him to go home.'
(Chung & Timberlake 1985: 249)

(5.223) Gli hanno ordinato che tacesse / di tacere.
to.him they.have ordered that be.quiet+PAST+**SUBJ** / PREP be.quiet+**INFIN**
'They ordered him to be quite.'
(Palmer 2001: 139-140)

(5.224) Hasta ol-**duğ**-u-nu / *ol-**ma**-sı-nı söyle-di.
sick AUX-**FN**-POSS-ACC AUX-**AN**-POSS-ACC say-PAST
'(S)he said that she was sick.'

(5.225) Hemen gel-**me**-si-ni / *gel-**diğ**-i-ni emret-ti.
immediately come-**AN**-POSS-ACC come-**FN**-POSS-ACC order-PAST
'(S)he ordered him/her to come right away.'

[86] ENVISIONED is defined as a purely semantic category, while 'subjunctive' is sometimes used to label specific markers in specific languages. A marker labeled as 'subjunctive' in a language may convey meanings other than ENVISIONED and even appear in a main clause.

5.3.4 ASSERTED

ASSERTED enables a speaker to perform an illocutionary act by signaling that she accepts a certain representation of the world as real. It renders descriptive utterances generally characterized as having 'assertive' or 'declarative' mood.[87] Below are some English examples:

(5.226) I have never seen an armadillo.

(5.227) Antwerp is a big city.

(5.228) John is about to leave.

(5.229) Ellen will join us later.

In section 4.1.6, ASSERTED was defined as a 'category of relevance' which combines ACCEPTED and IMMEDIATE CONTRIBUTION (i.e., one which establishes a link between a reflection taken as real and the immediate (illocutionary) intention of the speaker). And in section 4.4.2, it was shown that an utterance which signals ASSERTED in its main clause (e.g., by a grammatical marker or by zero-marking) explicitly conveys an ACCEPTED reflection and only conventionally implies the speaker's illocutionary intention. This suggests that an assertive sentence can be used for performing a variety of illocutionary acts depending on the speaker's intentions in different communicative contexts. This is exemplified in (5.230) below. Each of the illocutionary act descriptions (assuming that they correctly identify what the speaker intentionally did in uttering the sentence) designates S's immediate intention with an illocutionary predicate, while the 'indicative' subordinate clauses express the ACCEPTED projection:

(5.230) S says to H: "The experiment was reliable".

Possible illocutionary act descriptions in different communicative contexts:

S states that the experiment was reliable.

S admits that the experiment was reliable.

S claims that the experiment was reliable.

S insists that the experiment was reliable.

S suggests that the experiment was reliable.

…

The mutual regulation of the implication (by the speaker) and inference (by the addressee(s)) of the speaker's immediate intentions (and the resultant recovery of the illocutionary force) in assertive utterances (as well as in directives; see section 5.3.5 below) is presumably guided by

interlocutors' decisions based on rational human behavior. As such, they can be understood in the light of Grice's (1975) Principle of Cooperation (already mentioned section 4.3.1). [88]

An utterance which expresses ASSERTED does not necessarily involve certainty towards its propositional content. In the English sentences (5.231) and (5.232) below, ASSERTED combines with different degrees of epistemic modality and in (5.233), with evidentiality. The Tauya (Trans-New Guinea) example in (5.234) (MacDonald 1990; cited in Hengeveld 2004) transparently illustrates the co-occurrence of ASSERTED with epistemic modality (PROBABLE), since this language possesses an overt grammatical marker for assertion (*-ʔa*; identified as a 'declarative' marker in Hengeveld 2004: 1191):

(5.231) The meeting may be cancelled.

(5.232) Sue must have been late.

(5.233) John appears to have left.

(5.234) ʔei-ra mene-a-rafo-**ʔa**.
there-TOP stay-3.SG-DUB-**DECL**
'Maybe he's there.'
(MacDonald 1990: 209; cited in Hengeveld 2004: 1191)

Among other examples of overt grammatical marking for ASSERTED are the Greenlandic Eskimo mood sign *v* (glossed as 'indicative' in Sadock & Zwicky 1985, it also appears in questions, but with a different set of person suffixes) (5.235), and the Somali (Cushitic) classifier *waa* (labeled 'declarative' by Saeed 2003) (5.236):

(5.235) lga**voq**.
cook.**INDIC**.3.SG
'He cooks.'
(Sadock & Zwicky 1985: 167)

(5.236) Warkii **waa**d dhegeysatay.
news+the **DECL**+you listen.to.2sg.PAST
'You listened to the news.'
(Saeed 2003: 237)

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[87] Not all utterances traditionally classified as 'assertive' will be taken here as entailing ASSERTED; they may also involve GENERAL STATEMENT (section 4.5.3.6) or IMMEDIATE CONTRIBUTION (section 4.5.3.3).

[88] Although the Principle of Cooperation (with its four maxims of conversation) has mostly been discussed in connection with conversational implicatures, Grice actually presents it as the rational basis of human communication in general. A conversational implicature arises when a speaker intentionally 'flouts' a specific conversational maxim without violating the Principle of Cooperation.

Languages may possess strategies which emphasize the component of volitional immediacy (i.e., IMMEDIATE CONTRIBUTION) involved in ASSERTED. For instance, Li, Thompson & Thompson (1982), who characterize the Chinese sentence final particle *le* as conveying 'Currently Relevant State', point to a specific use of the particle which emphasizes "the speaker's total contribution to the conversation at that point" (Li, Thompson & Thompson 1982: 28).[89] This particle appears, for instance, in an utterance which closes a story:

(5.237)	jiéguo	wǒmen	jiu	bān	huí	Zhōngguo	**le**.
	in:the:end	we	then	move	return	China	**CRS**
	'In the end, we moved back to China.'						
	(Li, Thompson & Thompson 1982: 39)						

5.3.5 WANTED

WANTED enables a speaker to perform an illocutionary act by way of expressing her desire towards an envisioned (unreal) projection. In appears in different types of utterances, including expressions of wish and hope and directive utterances (which include commands, requests, obligations, pleas, suggestions, permissions, and questions). WANTED also makes part of the semantic values of commissive utterances (promises), since these express what the speaker 'consents' to do (for the benefit of her addressee(s)). These different utterance types all signal the basic anchoring category WANTED with different additional indexations (which may include the forcefulness of the speaker's desire, a concern for the willingness or interests of the addressee(s), social status of the interlocutors, moral or ethical norms, etc). Such additional or more fine-grained semantic distinctions will be taken here as 'specifications' of WANTED.

In section 4.1.6, WANTED was defined as establishing an intentional relevance between the contents of an ENVISIONED projection and the speaker's immediate (illocutionary) intention in making an utterance (i.e., the content of IMMEDIATE CONTRIBUTION). This compound nature of WANTED is exposed in (5.328) below. In each of the possible illocutionary act descriptions for the given directive sentence, S's immediate intention is designated with an illocutionary predicate, and the ENVISIONED projection is expressed by a 'subjunctive' subordinate clause:

[89] Li, Thompson & Thompson's (1982) following remark makes it clear that in such uses, *le* emphasizes the speaker's immediate (illocutionary) intention:

> For many *le* sentences in conversations, speakers report the intuition that the *le* "completes" the sentence, that without it, the sentence sounds incomplete, as if the speaker intends to say more (Li, Thompson & Thompson 1982: 37).

(5.328) S says to H: "Give me the keys."

Possible illocutionary act descriptions in different communicative contexts:

S orders H to give her the keys.

S obliges H to give her the keys.

S requests H to give her the keys.

S advises H to give her the keys.

S begs H to give her the keys.

…

The example above also illustrates the implicational/inferential nature of the transmission of the speaker's immediate (illocutionary) intention in the (grammatical) signaling of WANTED: The same sentence can be used for performing different illocutionary acts in different contexts.

WANTED is most transparently identifiable in expressions of wish, in which the propositional content can be either HYPOTHETICAL (5.239) or counterfactual (5.240). An expression of 'hope' implies some degree of likelihood (PROBABLE) for the expressed proposition (5.241) in addition to expressing WANTED:

(5.239) I wish to spend this summer in Ankara.

(5.240) I wish he had not talked like that.

(5.241) I hope he hasn't left yet.

Expressions of wish can be rendered by a variety of grammatical strategies, both within and across languages. A language may use a marker from, e.g., an 'optative', a 'subjunctive', a 'volitive', an 'imperative', an 'irrealis' or a 'conditional' paradigm. In English, wishes can be expressed not only by *I wish* or *I hope* as in (5.239-5.241) above, but also by special 'optative' strategies as in (5.242) and (5.243), by a 'conditional' strategy as in (5.244), or by an 'imperative' strategy as in (5.245):

(5.242) May he come! (van der Auwera & Schalley 2004: 92)

(5.243) Long live the Queen! (van der Auwera & Schalley 2004: 88)

(5.244) If only she was here!

(5.245) Get well soon.

Below are some expressions of wish from other languages. The Nahuatl (Uto-Aztecan) sentence in (5.246) involves an 'optative' suffix (Andrew 1975; cited in Bybee 1985), the Macedonian sentence in (5.247) uses the complementizer *da* (Kramer 1986; cited in Ammann & van

der Auwera 2004), and the Latin sentence in (5.248) uses both a special complementizer and the subjunctive mood (Lakoff 1968; cited in Palmer 1986, 2001, and in van der Auwera & Schalley 2004):

(5.246) mā chōca.
PART **weep.OPT**
'If only he would weep.'
(Andrew 1975: 52; cited in Bybee 1985: 171)

(5.247) **Da** pukneš!
that.MOD burst.Pres.2Sg
'May you burst!'
(Kramer 1986: 41; cited in Ammann & van der Auwera 2004: 355)

(5.248) **Ut** illum di … perduint!
that him gods destroy+3PL+PRES+**SUBJ** (Glosses by Palmer 2001)
'May the gods destroy him!
(Lakoff 1968: 172; cited in Palmer 1986: 39-40, 2001: 109, and in van der Auwera & Schalley 2004: 88)'

Utterances sometimes identified as 'first person imperatives' or 'jussives' can also be taken as expressions of wish (rather than as genuine directives). Below are some examples. The English sentence in (5.249) uses the periphrastic strategy *let*, the Turkish sentence in (5.250) an 'optative' marker, and the French sentence (5.251), a 'complementizer plus subjunctive' strategy:

(5.249) **Let** me sing! (van der Auwera, Dobrushina & Goussev 2004: 56)

(5.250) Gid-**e**-yim.
go-**OPT**-A1SG
'Let me go.'

(5.251) **Que** je te **réchauffe** contre moi!
that I you warn.**SUBJ** against me (Glosses mine)
'Let me warn you against me!'
(Kordi 2001: 377, cited in van der Auwera, Dobrushina & Goussev 2004: 62)

WANTED is the most essential semantic ingredient of directive utterances, which include not only orders and requests but also promises, offers, suggestions and warnings. Different from simple expressions of wish, they additionally involve a component of 'appeal' to the addressees to fulfill what the speaker wants.[90] They are typically marked with an 'imperative' mood,[91] but can

[90] van der Auwera, Dobrushina & Goussev (2004) take the presence of an 'appeal' as the main criterion in identifying an utterance as a semantic imperative.

also involve a 'subjunctive', 'optative', 'irrealis', 'volitive', or 'future' strategy. The English sentence in (5.252) and the Yakut (Turkic) sentence in (5.253) illustrate imperative marking. (5.254) illustrates the English *let* strategy in expressing an appeal to the first person plural. (5.255) exemplifies the use of an 'optative' marker in Aleut (Eskimo-Aleut), and (5.256), of an 'irrealis' marker in Palauan (Malayo-Polynesian):

(5.252) Come in!

(5.253) bar-**dyn**-lar.
go-IMP.3-PL
'Let them go.'
(Birjulin & Xrakovsky 2001: 27)

(5.254) **Let** us sing! (van der Auwera, Dobrushina & Goussev 2004: 56)

(5.255) haqa-**a**-x̂t(a).
come-**OPT**-A3SG(PLU)
'Let him/them come near.'
(Birjulin & Xrakovsky 2001: 27)

(5.256) **Mo**-lim a kęrum!
2SG(**IRR**)-drink ART your medicine
'Drink your medicine!'
(Josephs 1975; cited in Chung & Timberlake 1985: 248)

Languages may possess strategies which serve to modulate (reinforce or mitigate) the forcefulness of the speaker's appeal. In many languages, as in English, a directive utterance can be made more 'polite' or 'tentative' by using an interrogative construction which literally questions the speaker's ability or willingness:

(5.257) Can/could you turn the light on?

(5.258) Will/would you open the window please?

Expressions of obligation and permission[92] can be either descriptive or directive. A descriptive use is at stake when an utterance refers to an obligation which is imposed (or a permission which is

[91] Some scholars reserve the term 'imperative' to speakers' appeals for actions by 2nd persons, while some use it for all persons. The corresponding mood with 3rd person(s) or 1st person plural is sometimes called a 'hortative'. See Xrakovskij (2001) for a typological survey on the expression of the imperative (which he defines as including the hortative).

[92] Expressions of obligation and permission are often subsumed under the category label 'deontic modality', which is sometimes applied to all directive utterances.

granted) by a source other than the speaker. A directive use is at stake when the speaker imposes or endorses an obligation (or, grants a permission) by dint of her immediate illocutionary act.[93]

Examples of descriptive expressions of obligation and permission are given below. (5.259) explicitly designates an obligation imposed on John by Mary. (5.260) and (5.261) express 'states of necessity' (see also section 2.7, examples (2.58-2.62), which involve obligations imposed by John's parents and by religious rules, respectively. Similarly, the permissions involved in (5.262-5.264) are all descriptive, because they report situations concerning what the subjects are permitted to do without reflecting the speaker's own volitional attitude. (5.262) designates an act of permission, while (5.263) and (5.264) express 'states of possibility' (see also section 2.7, examples (2.50-2.56), due to permissions granted by John's parents and school regulations, respectively. In such descriptive (assertive) expressions, elements of obligation and permission appear as part of the designated SoA. They are analyzed in the present framework as involving ASSERTED in their highest layer of anchoring:

(5.259) Mary obliged John to stay home.

(5.260) John must/has to return home before midnight (e.g., obligation imposed by John's parents.)

(5.261) One must/has to take off one's shoes before entering the mosque.
(A socially imposed obligation tied to religious rules)

(5.262) Mary allowed John to meet his friends.

(5.263) John may stay with us until midnight. (e.g., permission granted by John's parents)

(5.264) Students may take up to six courses per semester. (An institutionally granted permission)

Below are some directive expressions of obligation and permission. In (5.265), the obligation is exclusively imposed by the speaker, without any indexation of social, ethical or moral norms or values. In (5.266) the obligation is tied to ethical norms, but is also endorsed by the speaker. (5.267) expresses a permission granted by the speaker to the addressee by dint of the immediate illocutionary act. Such expressions of obligation and permission are identified as directive utterances, because the speaker signals that she 'wants' or 'consents' with the carrying out of the designated action. Like other directives utterances, they are analyzed here as signaling WANTED in their main clauses:

[93] The opposition between 'descriptive' and 'directive' uses is similar to that between 'speaker-oriented' and 'agent-oriented' moods in Bybee, Perkins & Pagliuca (1994: 179), Bybee & Fleishman (1995: 6), and to that between 'descriptivity' and 'performativity' in Nuyts' (2001a) (who applies this distinction to 'attitudes' in general, i.e., to epistemic and evidential qualifications in addition to deontic and directive ones). What is identified here as 'directive' expressions of obligation and permission are analyzed in Palmer (2001: 75) as involving 'subjectivity'.

(5.265) You have to tell me where he is! (Obligation exclusively exerted by the speaker)

(5.266) You should tell the truth! (Obligation ethically imposed, also exerted by the speaker)

(5.267) You may leave now (e.g., I allow you to). (Permission granted by the speaker)

Markers identified as conveying 'speaker-oriented modality' in Bybee, Perkins & Pagliuca (1994: 179) (specifically, 'imperative', 'prohibitive', 'optative', 'hortative', 'admonitive' and 'permissive') can all be seen as including the anchoring category WANTED in their overall semantic ranges.

5.3.6 ACCEPTABLE

ACCEPTABLE conveys that a reflection is admitted or conceded to some degree. It qualifies a certain projection (typically one which has just been pronounced by the addressee) as acceptable, rather than fully accepting it or presenting it as an original, personal contribution. Since it does not make any intentional contribution to the communicative context on its own, it cannot appear at the highest layer of anchoring in a main clause (see the constraint 4.13 in section 4.3.1). It typically appears in conjunction with a main clause which expresses the speaker's actual illocutionary intention.

ACCEPTABLE was defined in section 4.1.4 as expressing a quantificational value over a range of projections. This technical definition extends the similar quasi-logical formulation of RECURRENT (as 'quantification over a range of temporal locations') and of PROBABLE (as 'quantification over a range of thoughts') to the volitional domain, in order to grasp the idea of a 'scale of acceptability'.

Below is an example of ACCEPTABLE from English. The auxiliary *may* in this sentence does not express epistemic modality (PROBABLE), for it can be uttered even when the speaker is certain that the proposition in the conceded message is true. For instance, it can follow the addressee's praise of a certain novelist for winning a literary prize:

(5.268) He **may** have won the literary prize, but I don't like his novels.

In such utterances, *may* indicates that the speaker concedes the acceptability of what the addressee has just suggested, rather than (just) its truth. This semantic dimension operates in the volitional domain, taking scope over the epistemic relation expressed in the utterance. This can be more transparently seen in the following example, which signals that the speaker can admit an assessment of probability, which may have been expressed upon a statement like '*He is likely to succeed*':

(5.269) He **may** be likely to succeed, but this does not mean anything to me.

Indeed, Sweetser (1990) identifies such uses of *may* as involving 'speech act modality' rather than epistemic modality or doubt. For instance, the sentence in (5.270) is roughly equivalent to "I admit that he's a university professor, and I nonetheless insist that he is dumb" (Sweetser 1990: 70). The same meaning can also be expressed by an if-clause in English, as seen in Sweetser's example in (5.271):

(5.270) He **may** be a university professor, but he sure is dumb. (Sweetser 1990: 70)

(5.271) **If** he is a stuffed shirt, he's not a fool. (Sweetser 1990: 139)

Bybee, Perkins & Pagliuca (1994: 225-228) and Palmer (2001: 11, 31, 123-124) subsume similar uses under the more general title 'concessive clauses',[94] and Palmer (2001) further takes them as instances of the typological category 'Presupposed'. Palmer's following examples from Italian (5.272) and Latin (5.273) can be taken as expressing ACCEPTABLE as defined here, for they do not contrast two 'propositions' in a strictly veridical sense, but two 'linguistic messages' (one taken by the speaker as acceptable or assertable, and one which she willfully asserts):

(5.272) Sia pure come dici tu ma io non vengo.
be+3SG+PRES+SUBJ perhaps as say you but I not come
'It may be as you say, but I'm not coming.'
(Palmer 2001: 31)

(5.273) Quamvis sis molestus, numquam te esse confitebor malum.
although be+2SG+PRES+SUBJ troublesome never you to.be I.will.confess evil
'Although you are troublesome, I will never admit you to be evil.'
(Palmer 2001: 123)

5.3.7 GENERAL STATEMENT

GENERAL STATEMENT presents a message as one which is not strictly confined to a certain speaker's will in a specific communicative context. It rather expresses an impersonal statement issued by a social or institutional authority. It is hence typically found in official or administrative discourse and in the written form, e.g., in announcements, reports, regulations, legal documents, certificates, and other legislative texts. It can also appear in the spoken register, e.g., in announcements by spokesmen of official institutions or in news reports. Below are some examples:

[94] Note that a 'concessive clause' can also convey an epistemic meaning, describing "a situation which would ordinarily lead to a negative implication about the main clause" (Bybee, Perkins & Pagliuca 1994: 225). Epistemic concessive clauses are typically rendered by *although* in English (see, e.g., König 1986).

(5.274) The executive committee consists of five members.
(e.g., as a statement in a booklet of regulations)

(5.275) The office will be closed on Monday 27 August. (e.g., as an announcement by a company)

(5.276) It is dangerous to enter the construction area. (e.g., as a warning on a signboard)

As seen in the examples above, English does not grammatically distinguish GENERAL STATEMENT from ASSERTED; it expresses both with the zero-marked 'indicative' mood. It is the utterance context which makes it clear which anchoring category is at stake (i.e., whether it is produced in a personal communicative setting of in a context of impersonal communication). The Turkish enclitic *-DIr* provides an example of an overt marker of GENERAL STATEMENT.[95] For instance, (5.277) below can appear in a vacancy announcement by an institution or a company. If the same message would be conveyed by a speaker in a non-official context, *-DIr* would not be there:

(5.277) Başvuru-lar-da en az iki yabancı dil şart-ı ara-n-acak-**tır**.
application-PLU-LOC most few two foreign language condition-POSS seek-PASS-FUT-**DIr**
'Applicants will be required to speak at least two foreign languages.'

5.4 Summary

This chapter provided usage-based characterizations for the basic anchoring categories, expanded on how they contrast to each other in each domain and illustrated each category with grammatical strategies across a wide range of languages.

The next chapter shows how the semantic value of an utterance can be represented as a whole in the metalanguage of anchoring categories.

[95] *-DIr* can also express ATEMPORAL, GENERAL FACT, and PROBABLE; see Chapter 8.

Chapter 6

Semantic values in the metalanguage of anchoring categories

This chapter introduces a metalanguage which enables one to represent the semantic value (the convention-bound part of the overall meaning) of a natural language utterance in terms of basic anchoring categories. It is not intended as a full-fledged formal language and not coupled with any evaluative procedures which rely on models of 'actual' or 'possible' worlds. This metalanguage only aims to restate what the original utterances already state (with greater precision and efficiency) in such a way as to make various semantic components maximally transparent and cross-linguistically comparable.

6.1 The layered representation of the semantic value in the metalanguage

A well-formed expression in the metalanguage of anchoring categories includes a volitional category, an epistemic category, a temporal category, and an abstract predicational content (SoA), taking scope over one another in this respective order. This hierarchical semantic value, already motivated in sections 2.6 and 3.1.2, is given below:

(6.1) Volitional category(Epistemic category(Temporal category(SoA)))

The procedure of translating a natural language utterance into the metalanguage simply consists in checking the convention-bound meaning of the utterance against the characterizations given for the 21 anchoring categories in the preceding two chapters. Since the semantic space in each domain of anchoring is exhaustively (albeit schematically) partitioned by seven basic categories, every utterance will match one and only one anchoring category from each domain. Semantic ingredients which go beyond the schematic definitions of anchoring categories (be them conveyed by grammatical markers or lexical items) will be represented as 'specifications' (see section 4.2). For instance, (6.2) below matches POSTERIOR in the temporal domain, with the additional specification 'at five'. The sentence expresses PROBABLE in the epistemic domain (specifying a 'medium' degree of likelihood), and straightforwardly matches ASSERTED in the volitional domain (as it 'describes' a possibility rather than, e.g., signaling the speaker's wish):

(6.2) John may take the train at five.
temporal domain: POSTERIOR/at five/
epistemic domain: PROBABLE/medium/
volitional domain: ASSERTED

The notations used in the metalanguage are shown in the following examples. A signaled anchoring category is indicated by small capital letters. Designated contents (SoAs) are represented

in the form of a predicate and its arguments, which are shown in square brackets ([ ]). Specifications of signaled anchoring categories are placed between slash signs (//). Semantic elements which directly qualify the predicate (e.g., 'adjuncts' to verbs which specify manner, speed, etc.) are taken as specifications of the predicate, as with *quickly* in (6.3). SoA-participants are not analyzed for their referential status (i.e., for their 'entity anchoring'); they appear in the metalanguage in the same way as they do in the source language (or in the English translation), as shown with *the train* and *a train* in (6.4) and (6.5):

(6.3) Get up quickly!
WANTED/order/(HYPOTHETICAL(PROSPECTIVE/imminent/(get up/quickly/[you])))

(6.4) John may take the train at five.
ASSERTED(PROBABLE/medium/(POSTERIOR/at five/(take[John, the train])))

(6.5) John might have taken a train.
ASSERTED(PROBABLE/low/(PERFECT/result/(take[John, a train])))

A copular sentence is one which involves a non-verbal (e.g., adjectival, nominal, directional or locative) expression as the predicate. Below are some examples of how copular predication is represented in the metalanguage:

(6.6) John is sick.
ASSERTED(CERTAIN(SIMULTANEOUS(sick[John])))

(6.7) I am in the library.
ASSERTED(CERTAIN(SIMULTANEOUS(in the library[I])))

(6.8) John is a good teacher.
ASSERTED(CERTAIN(ATEMPORAL(a good teacher[John])))

Below are examples with various English sentences, some of which associated with a minimal context. The metalinguistic translations reflect how the conventional meanings of the utterances (in the given contexts) match the basic anchoring categories defined and characterized in Chapters 4 and 5. (Note that these examples are expository only; they are not meant as a thorough semantic analysis of the English TAM markers):

(6.9) John is having his meal.
ASSERTED(CERTAIN(SIMULTANEOUS(have[John, his meal])))

(6.10) Lucy is going to have a baby.
ASSERTED(CERTAIN(PROSPECTIVE(have[Lucy, a baby])))

(6.11) They may have left.
ASSERTED(PROBABLE/medium/(PERFECT/result/(leave[they])))

(6.12) John might have taken a train.
ASSERTED(PROBABLE/low/(PERFECT/result/(take[John, a train])))

(6.13) John must be working hard nowadays.
ASSERTED(PROBABLE/high/(RECURRENT/nowadays/(work/hard/[John])))

(6.14) The whale is a mammal. (e.g., uttered by a biology teacher in the class.)
ASSERTED(GENERAL FACT(ATEMPORAL(a mammal[the whale])))

(6.15) John seems to have failed the exam. (e.g., upon noticing John's bad temper.)
ASSERTED(CONJECTURED(PERFECT/result/(fail[John, the exam])))

(6.16) You are smoking! (e.g., upon seeing the addressee smoking.)
ASSERTED(NEW INFORMATION(SIMULTANEOUS(smoke[you])))

(6.17) John has come! (e.g., upon seeing John's shoes in the hall.)
ASSERTED(INFERRED(PERFECT(come[John])))

(6.18) He may be a good teacher, (but …)
ACCEPTABLE(CERTAIN(ATEMPORAL(a good teacher[he])))

(6.19) May he die!
WANTED/wish/(HYPOTHETICAL(PROSPECTIVE/imminent/(die[he])))

(6.20) Stop!
WANTED/order/(HYPOTHETICAL(PROSPECTIVE/imminent/(stop[you])))

(6.21) Get up quickly!
WANTED/order/(HYPOTHETICAL(PROSPECTIVE/imminent/(get up/quickly/[you])))

(6.22) I shall bring you the book tomorrow.
WANTED/promise/(HYPOTHETICAL(POSTERIOR/tomorrow/(bring[I, you, the book])))

(6.23) You are fired! (e.g., as uttered by the boss)
IMMEDIATE CONTRIBUTION(NEW INFORMATION(SIMULTANEOUS(fired[you])))

All of the examples above consist of simple affirmative utterances which involve deictic anchoring relations. The metalinguistic representations of utterances which involve center displacements, subordinate contents, negation and interrogation are given in the following sections.

6.2 Displacements in the metalanguage

A displaced temporal, epistemic, or volitional frame (see section 3.2.1) can be related to its parent frame by any anchoring category except one of immediacy (SIMULTANEOUS, NEW INFORMATION or IMMEDIATE CONTRIBUTION). This is because a displacement, by definition, represents a detachment

from the deictic center. A specific displacement may be exhaustively characterized in terms of a basic anchoring category, but it may also be associated with more fine-grained semantic dimensions. The convention of indicating such additional semantic dimensions as 'specifications' will be followed in representing utterances which involve displacements too.

6.2.1 Representing temporal displacements

The examples below show how local temporal displacements are represented in the metalanguage of anchoring categories. A referential time expression which induces a displacement is shown between slash signs (as a specification), and the anchoring category presupposed by this expressions is indicated between curly brackets ({ }). The temporal displacement trigger as a whole is indicated by the subscript *DISP-T*, and the newly constructed temporal frame is assigned a label (e.g., $frame_{tmp}$). Dependent utterances within the displaced frame are given in a separate line, between angle brackets (< >):

(6.24) Yesterday at six, …
/yesterday at six/{ANTERIOR}$_{DISP\text{-}T}$: $frame_{tmp}$
$frame_{tmp}$: <…>

(6.25) Next month, …
/next month/{POSTERIOR}$_{DISP\text{-}T}$: $frame_{tmp}$
$frame_{tmp}$: <…>

(6.26) Sometimes, …
/sometimes/{RECURRENT}$_{DISP\text{-}T}$: $frame_{tmp}$
$frame_{tmp}$: <…>

Subordinate clauses with *when*, *as*, *whenever, by the time*, *the day*, *the moment* in English trigger local temporal displacements by 'retrieving' the presupposed temporal value associated with an occurrence. This retrieval function is represented in the metalanguage as *time_of* (or as one of its more specific variants like *range_of*, *day_of, times_of,* etc.). Below are some examples:[96]

(6.27) When John comes …
time_of(come[John]){POSTERIOR}$_{DISP\text{-}T}$: $frame_{tmp}$
$frame_{tmp}$: <…>

(6.28) As I saw him, …
time_of(see[I, him]){ANTERIOR}$_{DISP\text{-}T}$: $frame_{tmp}$
$frame_{tmp}$: <…>

[96] Cross-linguistically, clauses which appear in such time-retrieving constructions may or may not retain their explicit temporal marking. For instance, in English, past is explicitly marked (as in *When John came*) while future is unmarked (i.e., it receives present tense, as in *When John comes*).

(6.29) While John was painting, …

range_of(paint[John]){ANTERIOR}$_{DISP\text{-}T}$: frame$_{tmp}$

frame$_{tmp}$: <…>

(6.30) The day you left, …

day_of(leave[you]){ANTERIOR}$_{DISP\text{-}T}$: frame$_{tmp}$

frame$_{tmp}$: <…>

(6.31) Whenever I see her, …

times_of(see[I, her])(RECURRENT) $_{DISP\text{-}T}$: frame$_{tmp}$

frame$_{tmp}$: <…>

As already mentioned in section 3.2.2, dependent clauses which appear under the scope of temporal displacements include anaphoric time reference. Depending on the type of the temporal displacement, this reference can be to past, to future, or to repeated occasions. Anaphoric reference is represented in the metalanguage with the subscript *ANA*. Below are examples which involve ANTERIOR$_{ANA}$, POSTERIOR$_{ANA}$, and RECURRENT$_{ANA}$:

(6.32) Yesterday at two, Mary was reading a book.

/yesterday at two/{ANTERIOR}$_{DISP\text{-}T}$: frame$_{tmp}$

frame$_{tmp}$: <ASSERTED(CERTAIN(ANTERIOR$_{ANA}$(SIMULTANEOUS(read[Mary, a book])))>

(6.33) When John came, Mary had left.

time_of(come[John]){ANTERIOR}$_{DISP\text{-}T}$: frame$_{tmp}$

frame$_{tmp}$: <ASSERTED(CERTAIN(ANTERIOR$_{ANA}$(PERFECT(leave[Mary])))>

(6.34) When John came, Mary was about to leave.

time_of(come[John]){ANTERIOR}$_{DISP\text{-}T}$: frame$_{tmp}$

frame$_{tmp}$: <ASSERTED(CERTAIN(ANTERIOR$_{ANA}$(PROSPECTIVE(leave[Mary])))>

(6.35) Tomorrow at six, Mary will have left.

/tomorrow at six/{POSTERIOR}$_{DISP\text{-}T}$: frame$_{tmp}$

frame$_{tmp}$: <ASSERTED(CERTAIN(POSTERIOR$_{ANA}$(PERFECT(leave[Mary])))>

(6.36) Whenever I see John, he is in a hurry.

times_of(see[I, John]){RECURRENT}$_{DISP\text{-}T}$: frame$_{tmp}$

frame$_{tmp}$: <ASSERTED(CERTAIN(RECURRENT$_{ANA}$(SIMULTANEOUS(in a hurry[John])))>

A temporally dependent clause may also specify a perfective occurrence within a backward-displaced temporal frame, as exemplified in (6.37) below. This specific temporal relation will be described here as 'occurrence in past', and represented as ANTERIOR$_{ANA.OC}$. Like ANTERIOR$_{ANA}$, ANTERIOR$_{ANA.OC}$ is also anaphoric, because it also refers back to the time specification given in a

preceding clause or sentence. But it additionally advances time (i.e., shifts the temporal center forward) along the back-shifted time axis:

(6.37) As John entered, I left.

time_of(enter[John]){ANTERIOR}$_{\text{DISP-T}}$: frame$_{\text{tmp}}$

frame$_{\text{tmp}}$: <ASSERTED(CERTAIN(ANTERIOR$_{\text{ANA.OC}}$(leave[I])))>

ANTERIOR$_{\text{ANA,OC}}$ may indicate either 'sequentiality' or 'concurrence'. The sentence in (6.37) above implies that the speaker's leaving follows John's entry, hence it indicates sequentiality. But (6.38) below implies that the speaker's leaving 'fits into' the temporal range introduced by the preceding clause, hence it indicates concurrence. This difference in interpretation can be attributed to the type of the time-retrieving expression (*time_of* by *when* in (6.37) and *range_of* by *while* in (6.38)):

(6.38) While John was working, I left.

range_of(work[John]){ANTERIOR}$_{\text{DISP-T}}$: frame$_{\text{tmp}}$

frame$_{\text{tmp}}$: <ASSERTED(CERTAIN(ANTERIOR$_{\text{ANA.OC}}$(leave[I])))>

One can also find 'occurrence in future' (POSTERIOR$_{\text{ANA.OC}}$), as illustrated in the temporally dependent clause in (6.39). 'Habitual occurrence' (RECURRENT$_{\text{ANA.OC}}$) is also possible, when the displacement is to a plurality of temporal locations around the temporal center (6.40):

(6.39) When John comes, I will leave.

time_of(come[John]){POSTERIOR}$_{\text{DISP-T}}$: frame$_{\text{tmp}}$

frame$_{\text{tmp}}$: <ASSERTED(CERTAIN(POSTERIOR$_{\text{ANA.OC}}$(leave[I])))>

(6.40) Whenever I come across John, he walks away from me.

times_of(come across[I, John]){RECURRENT}$_{\text{DISP-T}}$: frame$_{\text{tmp}}$

frame$_{\text{tmp}}$: <ASSERTED(CERTAIN(RECURRENT$_{\text{ANA.OC}}$(walk away[he, me])))>

Temporally dependent clauses are not necessarily associated with certainty and assertion. They may involve, for instance, epistemic modality (6.41), or a request (6.42):

(6.41) While John was working, Jill may have left.

range_of(work[John]){ANTERIOR}$_{\text{DISP-T}}$: frame$_{\text{tmp}}$

frame$_{\text{tmp}}$: <ASSERTED(PROBABLE(ANTERIOR$_{\text{ANA.OC}}$(leave[Jill])))>

(6.42) When John comes, call me.

time_of(come[John]){POSTERIOR}$_{\text{DISP-T}}$: frame$_{\text{tmp}}$

frame$_{\text{tmp}}$: <WANTED/request/(HYPOTHETICAL(POSTERIOR$_{\text{ANA.OC}}$(call[you, me])))>

In discourse-level temporal displacements, anaphoric time reference is generally involved in dependent sentences rather than dependent clauses. For instance in narratives,[97] $\text{ANTERIOR}_{\text{ANA}}$ appears in the 'background segments' (where a certain stage in the storyline is elaborated with relevant events or states) and $\text{ANTERIOR}_{\text{ANA.OC}}$ appears in 'foreground' segments (where the time-line is advanced by sequential events).[98] Below are sample analyses for two short narrative segments:

(6.43) Yesterday at eight, I left home. I had been awake all night. I felt tired…

/yesterday at eight/{ANTERIOR}$_{\text{DISP-T}}$: $\text{frame}_{\text{tmp}}$

$\text{frame}_{\text{tmp}}$: <ASSERTED(CERTAIN($\text{ANTERIOR}_{\text{ANA.OC}}$(leave[I, home]))),

ASSERTED(CERTAIN($\text{ANTERIOR}_{\text{ANA}}$(PERFECT (awake[I])))),

ASSERTED(CERTAIN($\text{ANTERIOR}_{\text{ANA}}$(SIMULTANOEUS(tired[I])))))>

(6.44) Thursday morning, John will have received the results. He will inform you.

/Thursday morning/{POSTERIOR}$_{\text{DISP-T}}$: $\text{frame}_{\text{tmp}}$

$\text{frame}_{\text{tmp}}$: <ASSERTED(CERTAIN(PERFECT(receive[John, the results]))),

ASSERTED(CERTAIN($\text{POSTERIOR}_{\text{ANA.OC}}$(inform[he, you])))>

6.2.2 Representing epistemic displacements

Epistemic displacements typically occur in conditional sentences. Conditional sentences are structurally similar to *when*-sentences: Just like a 'when'-clause which retrieves the temporal value associated with a given SoA, an *if*-clause (a protasis) retrieves the epistemic value associated with a given proposition. In an epistemic conditional, the premise can be presupposed to be likely, unlikely, or counterfactual.[99] The apodosis of the conditional is anaphorically associated with this epistemic value.

Similar to the *time_of* function which retrieves a temporal relation in 'when'-clauses, the epistemic retrieval function in *if*-clauses is represented as *thought_of*. This epistemic displacement trigger which includes this function is shown with the subscript DISP-E, and the displaced epistemic frame is labeled as $\textit{frame}_{\textit{ep}}$. In the following examples, anaphoric reference within the displaced epistemic frames is indicated with PROBABLE/medium/$_{\text{ANA}}$ (6.45) and PROBABLE/low/$_{\text{ANA}}$ (6.46). The predictions relative to these epistemic frames is represented as PROBABLE/high/:

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[97] The term 'narrative' is used here to denote stretches of discourse where a speaker recounts events in a certain temporal sequence. Narrarives are not restricted to past; they can also be about events in the future or about regularly occurring events. A narrative can further be associated with certainty, evidentiality and it can be meant to represent real or fictive stories.

[98] Some languages have special tenses for sequential occurrences in narratives, e.g., 'narrative tenses' mentioned in Dahl (1985: 113-114), the Swahili 'consecutive tense' mentioned in Hopper (1979) and in Givón (2002: 244-245). Such forms, (in general, markers of the category type PASTn ('narrative pasts') in Dahl (1985)) can be taken as specialized markers of $\text{ANTERIOR}_{\text{ANA.OC}}$ which appear in past narratives.

[99] Just like temporal marking in 'when'-clauses, explicit marking of epistemic evaluations in 'if'-clauses exhibits cross-linguistic variation. A language may or may not explicitly mark differences between possible, probable, unlikely and counterfactual premises.

(6.45) If John comes tomorrow Marry will stay home.

thought_of(POSTERIOR(come[John])){PROBABLE/medium/}$frame_{ep}$

$frame_{ep}$: <ASSERTED(PROBABLE/medium/$_{ANA}$(PROBABLE/high/(POSTERIOR(stay[Marry, home])))>

(6.46) If John came tomorrow Marry would stay home.

thought_of(POSTERIOR(come[John])){PROBABLE/low/}$_{DISP\text{-}E}$: $frame_{ep}$

$frame_{ep}$: <ASSERTED(PROBABLE/low/$_{ANA}$(PROBABLE/high/(POSTERIOR(stay[Marry, home])))>

The protasis in (6.47) below also introduces a premise which is presupposed to be likely (probable). It differs from (6.45) above in only the temporal relation its signals.

(6.47) If John has come Marry will stay home.

thought_of(PERFECT(come[John])){PROBABLE}$_{DISP\text{-}E}$: $frame_{ep}$

$frame_{ep}$: <ASSERTED(PROBABLE $_{ANA}$(PROBABLE/high/(POSTERIOR(stay[Marry, home])))>

The conditional sentence in (6.48) below is different from the ones above not only in the temporal relation expressed in its protasis, but also in the temporal and epistemic relations in its apodosis:

(6.48) If John is here Marry has definitely stayed home.

thought_of(SIMULTANEOUS(come[John]){PROBABLE}$_{DISP\text{-}E}$: $frame_{ep}$

$frame_{ep}$: <ASSERTED(PROBABLE$_{ANA}$(CERTAIN(PERFECT(stay[Marry, home])))>

6.2.3 Representing volitional displacements

While a temporal displacement basically occurs along a one-dimensional temporal axis, displacements in the epistemic and the volitional domains can be qualified in many different ways. Especially, volitional displacements can target centers (volitional states) which can be related to the parent frame in highly specific ways. When such a relation is too specific to be straightforwardly analyzed in terms of the schematically delimited basic anchoring categories, it will be indicated in the metalanguage with small letters. For instance, the speaker may create a sense of communicative 'distance', by virtually shifting her volitional center away from the communicative situation (6.49). Or, an utterance may involve a report of what the speaker has heard from another illocutionary source ('hearsay'), as in (6.50):[100]

[100] Hearsay (or 'report') is taken in the present framework a specific kind of volitional displacement similar to what is at stake in 'reported speech' or 'indirect speech' rather than an evidential category in the strict sense of the term 'evidential' (see the end of section 5.2.4 and section 6.2.3). The anaphoric reference to the volitional frame construed around the will of another illocutionary agent is represented as hearsay$_{ANA}$.

(6.49) Could you give me the pen please?

distance$_{DISP}$: frame$_{vol}$

frame$_{vol}$:

<distance$_{ANA}$(WANTED/request/(HYPOTHETICAL(PROSPECTIVE/imminent/(give[you, me, the pen])))>

(6.50) Reportedly, Marry went to New York yesterday.

hearsay$_{DISP}$: frame$_{vol}$

frame$_{vol}$: <hearsay$_{ANA}$(ASSERTED(CERTAIN(ANTERIOR/yesterday/(go[Marry, to New York])))>

6.3 Subordination in the metalanguage

This section shows how subordination is represented in the metalanguage of anchoring categories. As already mentioned in section 3.3, anchoring relations are designated by temporal, epistemic, volitional, or illocutionary predicates, resulting in complex sentences (i.e, those with subordinate clauses). Different types of anchoring predicates take as complement the semantic contents listed in Table 2 below:

Type of the predicate	**Complement**
Temporal predicate	A SoA
Epistemic predicate	A proposition: *T[t](SoA)*
Volitional predicate	A reflection: *E[h](T[t](SoA))*
Illocutionary predicate	A message: *V[p](E[h](T[t](SoA)))*

Table 2. *Different types of predicates involved in complex sentences and their complements.*

Some examples are given below. (6.51) includes a temporal predicate, (6.52-6.54) include epistemic predicates, (6.55-6.57), volitional predicates, and (6.58-6.62), illocutionary predicates. As can be transparently seen in the metalinguistic translations below, the main clause of a complex sentence is always associated with its own three layers of signaled anchoring categories:

(6.51) It was in 1990 that I saw him.

ASSERTED(CERTAIN(ANTERIOR(in 1990[see[I, him])))

(6.52) Mary knew that John is often out of town nowadays.

ASSERTED(CERTAIN(ANTERIOR(know[Mary, RECURRENT/often/(out of town[John])])))

(6.53) Mary may be thinking that John was out of town yesterday.

ASSERTED(PROBABLE(SIMULTANEOUS(think[Mary, ANTERIOR/yesterday/(out of town[John])])))

(6.54) I believe that John is alive.
ASSERTED(CERTAIN(SIMULTANEOUS(believe[I, SIMULTANEOUS(alive[John])])))

(6.55) They will regret that she cannot come.
ASSERTED(CERTAIN(POSTERIOR(regret[they, CERTAIN(POSTERIOR(come/state of possibility/[she]))])))

(6.56) John hopes that Mary has passed the exam.
ASSERTED(CERTAIN(SIMULTANEOUS(hope[John, PROBABLE(PERFECT(pass[Mary, the exam]))])))

(6.57) John probably wants Mary to stay with us.
ASSERTED(PROBABLE/high/(SIMULTANEOUS(want[John, HYPOTHETICAL(POSTERIOR(stay[Mary, with us]))])))

(6.58) John may insist that there is a mistake in the calculation.
ASSERTED(CERTAIN(SIMULTANEOUS(insist[John, ACCEPTED(CERTAIN(SIMULTANEOUS(exist[a mistake, in the calculation]))))])))

(6.59) John told me that Jill may have been late.
ASSERTED(CERTAIN(ANTERIOR(tell[John, me, ACCEPTED(PROBABLE/medium/(PERFECT (late[Mary]))))])))

(6.60) John ordered Mary to stop the machine.
ASSERTED(CERTAIN (ANTERIOR(order[John, Mary, ENVISIONED(HYPOTHETICAL(PROSPECTIVE/imminent/(stop[Mary, the machine]))))])))

(6.61) Ask him to come back in an hour.
WANTED/request/(HYPOTHETICAL(PROSPECTIVE/imminent/(ask[you, ENVISIONED(HYPOTHETICAL(POSTERIOR/in an hour/(come back[he]))))])))

(6.62) I order you to stop the machine!
IMMEDIATE CONTRIBUTION(NEW INFORMATION(SIMULTANEOUS(order[I, you, ENVISIONED(HYPOTHETICAL(PROSPECTIVE/imminent/(stop[you, the machine]))))])))

The designation of an anchoring predicate can also trigger a center displacement, e.g., as in the examples above where the verbs are predicated over non-first person subjects (all except 6.54 and 6.62). Such displacements will not be represented in the metalanguage in the form of separate frames (i.e., between < > signs as in the examples under section 6.1 above). This would be redundant, for the scope of a displacement in such cases overlaps with that of the subordinate clause.

The last example above shows how explicit performatives are represented in the metalanguage of anchoring categories: Like other declarative utterances, they express categories of immediacy in all the three domains of anchoring, and they explicitly designate the speaker's immediate intention, i.e., the illocutionary act she intends to perform.

6.4 Negation in the metalanguage

Negation amounts to the *exclusion* of a semantic content from a higher-order entity. Three types of negation are identified as to the semantic domain in which they operate:

- Temporal negation excludes a SoA from a temporal location (or temporal range).
- Epistemic negation excludes a proposition from a thought (or a range of thoughts).
- Volitional negation excludes a reflection from a projection (or a range of projections).[101]

Negation is represented in the metalanguage with the sign ¬ (e.g., ¬ANTERIOR, ¬CERTAIN, ¬WANTED, etc.).

The type of negation that is actually involved in a negative utterance may not be easily identifiable, because languages do not always formally distinguish different types of negation. As an example, consider the assertive utterance with a factual proposition in (6.63), which is assigned a metalinguistic representation and an approximate illocutionary act description.

(6.63) Sue surprised me yesterday.

ASSERTED(CERTAIN(ANTERIOR/yesterday/(suprise[Sue, me])))

-> *The speaker asserts that it is certainly true that the SoA 'Sue's surprising her' occurred in the temporal range specified as yesterday.*

The negative counterpart of (6.63) is given in (6.64). It can be meant to convey a temporal negation (i.e., the exclusion of the SoA from the temporal range specified as *yesterday*), as in (6.64a). But it can also be intended to express an epistemic negation (i.e., the exclusion of the proposition from the range of thoughts qualified as CERTAIN) as in (6.64b), or a volitional negation (i.e., the exclusion of the reflection from the range of ACCEPTED projections involved in the speaker's assertion) as in (6.64c):

[101] Temporal negation basically corresponds to 'predicational negation' in the Functional Grammar framework (e.g., Dik 1997) and partially overlaps with what de Haan (1997: 12) calls 'narrow scope' negation. Epistemic negation corresponds to 'propositional negation' in Dik's (1997) system and covers what is called 'modal negation' in most logical frameworks. Volitional negation includes what (Horn 1985, 1989) calls 'external' or 'meta-linguistic negation'.

(6.64) Sue didn't surprise me yesterday.

(a) ASSERTED(CERTAIN(¬ANTERIOR/yesterday/(suprise[Sue, me]))) (e.g., … she surprised me today.)
-> The speaker asserts that it is certainly true that the SoA 'Sue's surprising her' is excluded from the temporal range specified as yesterday.

(b) ASSERTED(¬CERTAIN(ANTERIOR/yesterday/(surprise[Sue, me]))) (e.g., … this is not true.)
-> The speaker asserts that the proposition 'Sue's surprising her yesterday' is excluded from what she knows to be certainly true of the world (i.e., she says that the proposition is false).

(c) ¬ASSERTED(CERTAIN(ANTERIOR/yesterday/(surprise[Sue, me]))) (e.g., … she shocked me.)
-> The speaker excludes the reflection 'it is true that Sue surprised her yesterday' from what she intentionally asserts (i.e., she does not say "Sue surprised me yesterday").

Negation in a domain can entail (i.e., semantically imply) negation in another domain. In general, in the context of an assertive and factual utterance, temporal negation entails epistemic negation, which, in turn, entails volitional negation.[102] For instance, the semantic value given in (6.64a) above entails the ones given in (6.64b) and (6.64c). But in utterances which express anchoring relations other than certainty and assertion, the intended locus of negation may result in substantially different semantic values (and may be expressed by different formal strategies). Consider the expression of epistemic possibility in (6.65). The negative counterpart with *may not* in (6.66) involves a temporal (or, 'internal') negation. But the one in (6.67) with *cannot* involves an epistemic (or, 'external') negation, which yields a totally different meaning:

(6.65) John may be sleeping.
ASSERTED(PROBABLE(SIMULTANEOUS(sleep[John])))
-> The speaker asserts that it is probably true that the SoA 'John's sleeping' holds now.

(6.66) John may not be sleeping.
ASSERTED(PROBABLE(¬SIMULTANEOUS(sleep[John])))
-> The speaker asserts that it is probably true that the SoA 'John's sleeping' is excluded from now (i.e. qualifies the negative proposition as 'possible').

[102] This monotonic chain of implication is presumably related to the containment relations among entities in the three domains: By excluding a SoA from a temporal location in the context of an utterance, one will also have excluded it from the thought which contains this temporal location, and from the projection which contains this thought.

(6.67) John cannot be sleeping.

ASSERTED(¬PROBABLE(SIMULTANEOUS(sleep[John])))

-> *The speaker asserts that the proposition 'John is sleeping now' is excluded from the range of thoughts that she takes to be close to her current knowledge state (i.e., qualifies the proposition as 'impossible').*

The following examples illustrate the contrast between temporal and volitional negation in the context of a deictic (speaker-oriented) obligation. In (6.68) the speaker prescribes the addressee to go. The negative sentence in (6.69) prescribes the addressee not to go. But that in (6.70) does not prescribe anything; it signals that the speaker does not include the addressee's imminent leaving in the projections that she strongly wants to be real:

(6.68) You must/have to go.

WANTED/obligation/(HYPOTHETICAL(PROSPECTIVE/imminent/(go[you])))

-> *The speaker strongly wishes for a projection in which the addressee's going is 'included' in the imminent future (i.e. she prescribes the addressee to go).*

(6.69) You must not go.

WANTED/obligation/(HYPOTHETICAL(¬PROSPECTIVE/imminent/(go[you])))

-> *The speaker strongly wishes for a projection in which the addressee's going is 'excluded' from the imminent future (i.e. she prescribes the addressee not to go).*

(6.70) You don't have to go.

¬WANTED/obligation/(HYPOTHETICAL(PROSPECTIVE/imminent/(go[you])))

-> *The speaker 'excludes' the addressee's going in the imminent future from the projections that she strongly wishes for (i.e. she does not prescribe the addressee to go).*

Epistemic negation is critically involved in the expression of 'counterfactuality' (i.e., the indexation of the presupposition that a proposition is contrary to what is known to be true) in conditional sentences. The following examples illustrate the two types of negation that can be involved in conditional protases. (6.72) expresses temporal negation only, (6.73) expresses counterfactuality, and (6.74) expresses both temporal negation and counterfactuality. Counterfactuality is analyzed in the metalanguage of anchoring categories as negation in the context of an epistemic displacement: The proposition expressed in the protasis is presupposed to be *excluded* from the thought to which the displacement occurs, which is qualified as CERTAIN:

(6.71) If John has come … (no negation)

thought_of(PERFECT(come[John])){PROBABLE}$_{\text{DISP-EP}}$: frame$_{\text{ep}}$

frame$_{\text{ep}}$: <…>

(6.72) If John has not come … (temporal negation)
thought_of(¬PERFECT(come[John])){PROBABLE}$_{\text{DISP-EP}}$: frame$_{ep}$
frame$_{ep}$: <…>

(6.73) If John had come … (presupposed epistemic negation)
thought_of(PERFECT(come[John])){¬CERTAIN}$_{\text{DISP-EP}}$: frame$_{ep}$
frame$_{ep}$: <…>

(6.74) If John had not come … (temporal negation and presupposed epistemic negation)
thought_of(¬PERFECT(come[John])){¬CERTAIN}$_{\text{DISP-EP}}$: frame$_{ep}$
frame$_{ep}$: <…>

Below is given a full metalinguistic translation of a simple counterfactual conditional:

(6.75) If John had come Mary would be staying home.
thought_of(PERFECT(come[John])){¬CERTAIN}$_{\text{DISP-EP}}$: frame$_{ep}$
frame$_{ep}$: <ASSERTED(¬CERTAIN$_{\text{ANA}}$(PROBABLE/high/(SIMULTANOEUS(stay[Marry, home])))>

6.5 Interrogation in the metalanguage

As already mentioned in section 2.3, questions constitute a special subtype of directive utterances, in that they appeal the addressee(s) to provide a certain piece of information. Like other types of directives, they index a certain volitional attitude of the speaker (WANTED). But different from other directives, they do not express that the speaker wants the designated SoA to be realized. They rather signal that speaker wants to receive 'information' about (the participants of) a certain SoA. This volitional component will be represented in the metalanguage as WANTED/information/, without further analyses as to its more fine-grained semantic ingredients. The signaling of this volitional category yields an illocutionary force which urges the addressee(s) to provide the requested information.

In a 'yes/no'-question, what the speaker wants to learn is whether a proposition, which is currently 'hypothetical' for the speaker, is true of false. The examples below illustrate how 'yes/no'-questions are translated into the metalanguage of anchoring categories:

(6.76) Is John at home?
WANTED/information/(HYPOTHETICAL(SIMULTANEOUS(be[John, home])))

(6.77) Are you going to sleep?
WANTED/information/(HYPOTHETICAL(PROSPECTIVE(sleep[you])))

In a 'wh'-question, the speaker signals that she wants to receive a piece of information (which may be part of the designated SoA or a temporal specification) which would complete a proposition which is already associated with certainty. In the following examples, the items for which the speaker seeks information are underlined:

(6.78) What are you looking for?
WANTED/information/(CERTAIN(SIMULTANEOUS(look for[you, <u>what</u>]))

(6.79) Where will the meeting take place?
WANTED/information/(CERTAIN(POSTERIOR (take place[meeting, <u>where</u>]))

(6.80) When did John come?
WANTED/information/(CERTAIN(ANTERIOR/<u>when</u>/(come[John]))

6.6 Summary

This chapter demonstrated how the semantic values of natural language utterances can be expressed in the metalanguage of anchoring categories, transparently reflecting the semantic composition of a predicational content (SoA), a temporal category, an epistemic category, and a volitional category. It also showed how local and discourse-level displacements, different types of subordination and negation, and finally, interrogation, are represented in this metalanguage.

This chapter marks the end of Part I, which developed a purely semantic framework which can be used for analyzing tense, aspect and mood categories in any language. Part II will apply this framework in the synchronic and diachronic analyses of the ranges of polysemy associated with the Turkish TAM markers *-Xr*, *-DIr*, *-Iyor* and with zero-marking (*-Ø*).

Part II

A semantic analysis of the Turkish TAM markers *-Xr*, *-DIr*, and *-Iyor*

Chapter 7

General properties of Turkish and its TAM system

This chapter outlines the structural properties of the Turkish language, introduces the general structure of its TAM system and mentions the main strategies of subordination. It is intended as a background for the analysis of the TAM markers *-Iyor*, *-Xr*, and *-DIr*, which will be presented in the subsequent chapters.

7.1 The main parameters of the morphosyntax

Turkish is a head-final language of the agglutinating type. It uses suffixes for inflectional categories, which line up to the right of the verbal or nominal root:

(7.1) Uyu-yabil-ecek-ti-m.
sleep-ABIL-FUT-PASTe-A1SG
'I would be able to sleep.'

(7.2) sokak–ta–ki–ler–in
street-LOC-REL-PLU-GEN
'of those who are on the street'

The most frequent order in assertive sentences is the verb final construction where the initial position is occupied by the subject (SOV). But constituents can go in any position in the sentence, creating grammatical sentences with different information-structural distributions:

(7.3) Adam elma-yı ye-di.
man apple-ACC eat-PAST
'The man ate the apple.'

(7.4) Adam yedi elmayı.

(7.5) Elmayı adam yedi.

(7.6) Elmayı yedi adam.

(7.7) Yedi adam elmayı.

(7.8) Yedi elmayı adam.

Turkish exhibits person agreement in finite clauses and in possessive constructions. It doesn't have any object agreement. The person agreement markers are listed in Table 3 below:

	Clausal paradigm (finite clauses)		**Nominal paradigm (possessive constructions)**	
	Pronoun (Nominative)	**Agreement**	**Pronoun (Genitive)**	**Agreement (Possessive)**
1SG	*ben*	*-(y)Im*	*ben-im*	nominal-*(I)m*
2SG	*sen*	*-sIn*	*sen-in*	nominal-*(I)n*
3SG	*o* (nominal)	*-Ø*	*o-nun* (nominal-*(n)In)*	nominal-*(s)I*
1PL	*biz*	*-(y)Iz*	*biz-im*	nominal-*(I)mIz*
2PL	*siz*	*-sInIz*	*siz-in*	nominal-*(I)nIz*
3PL	*onlar* (nominal-*lAr)*	*(-lAr)*	(onlar-*ın)* (nominal-*(lAr)In)*	nominal-*(s)I/lArI*

Table 3*. Personal pronouns and agreement marking in clausal and nominal constructions. (Exceptions in clausal agreement are mentioned in section 7.2.)*

Person agreement markers normally follow all other markers on the clausal predicate, including the question particle *mI* (exceptions are mentioned in footnote 108 in section 7.2 below):

(7.9) Anl-ıyor-**sunuz**.
understand-CONT-**A2PL**
'You (pl) understand.'

(7.10) Yap-tır-ma-malı mı-**yız**?
do-CAUS-NEG-NEC QP-**A1PL**
'Shouldn't we make (him) do (it)?'

In possessive constructions, the possessor is marked with the Genitive case, and the possessum is marked by the Possessive person agreement:

(7.11) siz-**in** kedi-**niz**
P2PL-**GEN** cat-**POSS.A2SG**
'your (pl) cat'

(7.12) adam-**ın** kedi-**si**
man-**GEN** cat-**POSS**
'the man's cat'

Turkish is a 'pro-drop' language; pronouns in the subject position (of a clause or a possessive construction) can be omitted, presumably due to the distinctive person agreement paradigm. This is illustrated in (7.13) and (7.14) below. When the discursive context allows, pronouns at non-subject positions can also be dropped (7.15A):

(7.13) (Ben) gel-di-m.
P1SG come-PAST-A1SG
'I have come.'

(7.14) (siz-in) kedi-niz
P2SG-GEN cat-POSS.A2SG
'your (pl) cat'

(7.15) Q. Adam-ı kim gör-dü?
man-ACC who see-PAST
'Who saw the man?'

A. Ahmet gör-dü.
Ahmet see-PAST
'Ahmet saw (him).'

Turkish uses a morphological nominative-accusative case system in marking the relation of arguments to their predicates. In addition to the Genitive given in Table 3 above, Turkish makes use of the cases listed in Table 4 below:[103]

Case	**Marker**
Nominative	*-Ø*
Accusative	*-(y/n)I*
Dative	*-(y/n)A*
Locative	*-(n)DA*
Ablative	*-(n)DAn*

Table 4. *Morphological case markers in Turkish.*

The nominative, accusative, dative, and the ablative cases are illustrated below:

(7.16) Adam-**Ø** kadın-**a** kitab-**ı** ver-di.
man.**NOM** woman-**DAT** book-**ACC** give-PAST
'The man gave the book to the woman.'

(7.17) ders-**ten** sonra
lecture-**ABL** after
'after the lecture'

[103] Some scholars add to this list three additional cases: the Equative (*-cA*), the Minutive (Associative) (*-lI*), and the Privative (*-sIz*) (e.g., Banguoğlu 1986). Some also consider the instrumental/comitative suffix *-(y)lA* as a case marker, but it is best taken as the cliticized form of the postposition *ile* ('with').

7.2 The general structure of the TAM system and patterns of combination

Turkish TAM marking is sensitive to whether the predicate is verbal or non-verbal (i.e., nominal, adjectival or existential). A set of *bound markers* attach to verbal roots (which may already be marked for negation, causativity, passivity, or reciprocity). A partially corresponding set of *enclitics* and the inflections of the auxiliary verb *ol* ('be') apply to (i) non-verbal predicates or (ii) verbal predicates which are already inflected by bound markers. These three paradigms of TAM markers are listed in Table 5 below (non-verbal predicates can also appear with zero-marking, which is represented here as *-Ø*):

Bound markers			**Enclitics**			**Inflections of *ol* (AUX)[104]**
Abstract repres.	**Traditional label(s)**	**Gloss**	**Abstract repres.**	**Traditional label(s)**	**Gloss**	**Representation**
-Xr	'Aorist' 'Present' 'Habitual'	HABG	*-DIr*	'Judgment enclitic' '3rd person copula'	JDGe	*ol-ur*
-Iyor	'Continuous' 'Progressive'	CONT				*ol-uyor*
-mAktA	'Progressive'	PROG				*ol-makta*
-(y)AcAG	'Future' 'Definite future'	FUT				*ol-acak*
-DI	'Past' 'Definite past' 'Perfective'	PAST	*-(y)DI*	'Past' 'Past enclitic'	PASTe	*ol-du*
-mIş	'Evidential past' 'Perfect'	EPAST	*-(y)mIş*	'Evidential' 'Evidential past'	EPASTe	*ol-muş*
-mAlI	'Necessitative'	NEC				*ol-malı*
-(y)Abilir	'Abilitative' 'Possibility'	POS				*ol-abilir*
-sA	'Conditional'	COND	*-(y)sA*	'Conditional'	CONDe	*ol-sa*
-(y)A	'Optative'	OPT				*ol-a*
-sIn *(3sg)*[105]	'Imperative' 'Subjunctive'	IMP				*ol-sun*

***Table 5**. The three paradigms of TAM marking in Turkish.*[106]

[104] The *ol*-series can be further extended by the enclitics.

[105] The full imperative paradigm is as follows:

1SG:	*-(y)AyIm*	1PL:	*-(y)AlIm*
2SG:	*-Ø*	2PL:	*-(y)In*
3SG:	*-sIn*	3PL:	*-sIn(-lAr)*

Example (7.18) below illustrates the inflection of a verbal predicate by a bound marker (*-(y)AcAG*). In (7.19), an enclitic (*-DIr*) is attached to a non-verbal predicate. In (7.20), the same enclitic appears on a verbal predicate already inflected by a bound marker (*-mIş*). In (7.21) and (7.22), an inflection of *ol* (*ol-acak*) is applied to a non-verbal and an inflected verbal stem, respectively:

(7.18) Toplantı saat beş-te başla-yacak.
meeting hour five-LOC start-FUT
'The meeting will start at five.'

(7.19) Dünya yuvarlak-tır.
earth round-JDGe
'The earth is round.'

(7.20) Hale çık-mış-tır.
Hale leave-EPAST-JDGe
'Hale must have left.'

(7.21) Mehmet bura-da ol-acak.
Mehmet here-LOC AUX-FUT
'Mehmet will be here.'

(7.22) Mehmet çık-ıyor ol-acak.
Mehmet leave-CONT AUX-FUT
'Mehmet will be leaving.'

The enclitics *-(y)DI, -(y)mIş* and *-(y)sA* can also resume periphrastic forms, namely, *idi*, *imiş* and *ise*, which descend from the inflections of the Old Turkic auxiliary verb *är, i*.e., *är-ti*, *är-miş* and *är-se* (Lewis 1967/1978: 96; Johanson 2000c).[107] These periphrastic forms are rarely used in Modern Standard Turkish. The examples below illustrate them. The pairs are semantically identical:

(7.23) Mehmet hasta-**ydı** / hasta **idi**.
Mehmet sick-**(y)DI** sick **idi**
'Mehmet was sick.'

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[106] Formal motivations for distinguishing *-DI* from *-(y)DI*, *-mIş* from *-(y)mIş* and *-sA* from *-(y)sA* have been mentioned in a number of previous studies, including Sebüktekin 1971, Taylan 1996 and Sezer 2001. It can also be noted that while bound markers generally receive word stress, the enclitics cannot be stressed when they appear in a finite clause. The correspondence between *-Xr* and *-DIr* is acknowledged in Sansa (1986) and in Aksu-Koç (1995), mainly on semantic grounds. Sansa (1986) also shows that *-Ø* functions in non-verbal predication as the counterpart of *-Iyor* in verbal predication.

[107] Similarly, *-DIr* descends from *tur-ur,* which is the inflection of the once independent auxiliary *tur* (now *dur;* 'stay' or 'stand') with *-Xr* (Lewis 1967/1978: 96, Johanson 1998b: 115; see also section 9.2).

(7.24) Ayşe bugün çalış-ıyor-**muş** / çalış-ıyor **imiş**.
Ayşe today work-CONT-**(y)mIş** work-CONT **imiş**
'Reportedly, Ayşe is working today.'

(7.25) Hale gel-ecek-**se**… / gel-ecek **ise**…
Hale come-FUT-**(y)sA** come-FUT **ise**
'If Hale is going to come…'

The general patterns of TAM combination in verbal and non-verbal affirmative sentences are given below::[108]

(7.26) *In non-verbal predication:*

non-verbal predicate | enclitic / *ol*-series / *-Ø* | person agreement

In verbal predication:

verbal predicate | bound marker | (enclitic / *ol*-series) | person agreement[109]

The examples below illustrate some possible combinations in non-verbal predication. (7.27) and (7.28) illustrate zero-marking (*-Ø*) with adjectival and existential predicates, respectively. In

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[108] Not all combinations which fit these patterns are acceptable. *-DI* can only combine with *-(y)DI* and *-(y)sA,* and *-DIr* cannot attach to *-Xr*, *-sA*, or *-(y)A* (see Taylan 1996: 166-167). The *ol*-series does not combine with *-DI, -(y)A*, *-sA*, *-(y)Abilir* and *-mAlI*, and combinations with other bound markers is subject to semantic compatibility between elements chosen from each paradigm. Though not too often, *-(y)sA* and *-(y)mIş* can also attach to another enclitic, as illustrated below:

(i) Kaç-acak-mış-**sa**-k…
run.away-FUT-EPASTe-(y)sA-A1PL
'If it is told that we are going to run away…'

(ii) Kaç-acak-tı-**ymış**!
run.away-FUT-PASTe-***(y)mIş***
'Supposedly, he was going to run away!' (implying that this is nonsense)

Certain morphological and phonological contexts trigger exceptions for the phonological shapes of TAM markers and their combinatory patterns. *-Xr* and *-Iyor* digest the last vowel of verbal roots which end with a vowel (e.g., *kaşı* 'scratch': *kaş-ır* 'scratches', *kaş-ıyor* 'is scratching'; *eri* 'melt': *er-ir* 'melts', *er-iyor* 'is melting'; *yürü* 'walk': *yür-ür* 'walks', *yür-üyor* 'is walking'; *boya* 'paint': *boy-ar* 'paints', *boy-uyor* 'is painting', *ağla* 'cry': *ağl-ar* 'cries', *ağl-ıyor* 'is crying'). This is also observed when *-Iyor* combines with the negative marker *-mA* (e.g., *gel-me* 'not come': *gel-m-iyor* 'is not coming'; *sor-ma* 'not ask': *sor-m-uyor* 'is not asking'.) With *-DI*, *-(y)DI*, and *-(y)sA,* the 1SG agreement marker is *-k* instead of *-(y)Iz*, and the 2PL marker is *-nIz* instead of *-sInIz*. The 1PL of the Optative is *-(y)AlIm* (the Imperative and the Optative paradigms overlap in the 1SG and 1PL). Although person agreement markers normally follow all TAM markers, they precede *-DIr,* as shown in (i) below. The optional 3PL agreement *-lAr* can be placed either before or after an enclitic (ii)**:**

(i) Gör-müş-üm-dür.
see-EPAST-A1SG-JDGe
'I may have seen.'

(ii) Yürü-mekte-ler-di / yürü-mekte-ydi-ler
walk-PROG-A3PL-PASTe walk-PROG-PASTe-A3PL
'They were walking.'

[109] The bound TAM markers are often said to function as morphosyntactic 'nominalizers'. This does not mean that they derive genuine nouns or adjectives. As reflected in the pattern of combinability in verbal predication given here, bound markers allow the verbal predicate to which they attach to be further marked by the enclitics and the *ol*-series, which can directly attach to nouns and adjectives.

(7.29), an enclitic (*-(y)mIş*) is attached to a nominal, and in (7.30), another one (*-(y)sA*) to an existential predicate. (7.31) illustrates the combination of a non-verbal predicate with the auxiliary verb *ol,* which in turn is inflected with a bound-marker (*-DI*):

(7.27) Hasta-**Ø**.
sick-**Ø**
'(S)he is sick.'

(7.28) Dolap-ta bira var-**Ø**.
fridge-LOC beer EXCP-**Ø**
'There is beer in the fridge.'

(7.29) Öğretmen-**miş**.
teacher-**EPASTe**
'Reportedly, (s)he is a teacher.'

(7.30) Dolap-ta bira var-**sa** …
fridge-LOC beer EXCP-**CONDe**
'If there is beer in the fridge …'

(7.31) Hasta **ol-du**.
sick **AUX-PAST**
'(S)he got sick.'

The following examples show some possibilities of TAM marking on verbal predicates. (7.32) shows the affixation of a bound marker to a verbal root. (7.33)-(7.35) illustrate verbs followed by bound markers and enclitics. In (7.36) and (7.37), bound markers are followed by inflections of the auxiliary verb *ol:*

(7.32) Düş-**tü**-m.
fall.down-**PAST**-A1SG
'I fell down.'

(7.33) Kal-**sa-ydı** …
stay-**COND-PASTe**
'if (s)he had stayed…'

(7.34) Gel-**ecek**-ler-**dir**.
come-**FUT**-A3PL-**JDGe**
'They will probably come.'

(7.35) Gir-**ebilir-miş**-siniz.
enter-**POS-EPASTe**-A2PL
'Reportedly, you (pl) are allowed to enter.'

(7.36) Gel-**miş** **ol-malı**-yız.
come-**EPAST** **AUX-NEC**-A1PL
'We must have arrived.'

(7.37) Kalk-**acak** **ol-du**.
stand.up-**FUT** **AUX-PAST**
'(S)he attempted to stand up.'

The primary strategy of negation in verbal predication is the suffix *-mA*. It is attached to the verbal root and followed by a bound marker:

(7.38) Ahmet gel-**me**-di / gel-**me**-di-yse / gel-**me**-miş-tir /
gel-**me**-miş ol-abilir / gel-**me**-yecek-ti / gel-**me**-ye!
Ahmet come-**NEG**-PAST come-**NEG**-PAST-CONDe come-**NEG**-EPAST-JDGe
come-**NEG**-EPAST AUX-POS come-**NEG**-FUT-PASTe come-**NEG**-OPT
'Ahmet did not come / if he did not come / he probably did not come / he may not have come / he was not
going to come / may he not come!'

-Xr and *-(y)Abilir* constitute exceptions in the compositionality of the negative marker *-mA* with TAM morphemes. The negative of *-Xr* and *-(y)Abilir* are, respectively, *-mA* and *-(y)AmA* for the first persons (7.39, 7.40), and *–mAz* and *-(y)AmAz* for other persons (7.41, 7.42):

(7.39) Dondurma-yı sev-**me**-m.
ice cream-ACC like-**HABG.NEG**-A1SG
'I don't like ice cream.'

(7.40) Yarın gel-**eme**-yiz.
tomorrow come-**POS.NEG**-A1PL
'We cannot come tomorrow.'

(7.41) Kedi-ler ıslan-mak-tan hoşlan-**maz**-lar.
cat-PLU get.wet-INF-ABL like-**HABG.NEG**-A3PL
'Cats do not like to get wet.'

(7.42) Bura-ya gir-**emez**-siniz.
here-DAT enter-**POS.NEG**-A2PL
'You cannot enter here.'

A second negative strategy, the particle *değil*, can only follow a non-verbal predicate or a verbal predicate inflected by a bound marker, and person agreement marker comes after *değil* (7.43). Enclitics can be cliticized to *değil* (7.44). Double negation is possible with both *-mA* and *değil* (7.45):

(7.43) Hasta / git-miş / gid-ecek **değil**-im.
sick go-EPAST go-FUT **NEGP**-A1SG
'It is not the case that I am sick / that I went / that I will go.'

(7.44) Ahmet hasta / gel-miş / gel-ecek **değil**-di / **değil**-miş.
Ahmet sick come-EPAST come-FUT **NEGP**-PASTe **NEGP**-EPASTe
'It was not the case / reportedly not the case that Ahmet was sick / had come / would come.'

(7.45) Ahmet gel-**me**-miş / gel-**me**-yecek **değil**-di / **değil**-miş.
Ahmet come-**NEG**-EPAST come-**NEG**-FUT **NEGP**-PASTe **NEGP**-EPASTe
'It was not the case / reportedly not the case that Ahmet had not come / would not come.'

The negative of the existential copular verb *var* is *yok*:

(7.46) Dolap-ta bira **var**-Ø / **yok**-Ø.
fridge-LOC beer **EXCP**-Ø / **NEG.EXCP**-Ø
'There is beer in the fridge / There is no beer in the fridge.'

The question particle *mI* follows the bound markers (7.47) and precedes the enclitics (7.48, 7.49). It can be placed either before or after the *ol*-series (7.50, 7.51):

(7.47) Gel-ir **mi**? / Gel-miş **mi**? / Gel-meli **mi**? / Gel-sin **mi**?
come-HABG **QP** come-EPAST **QP** come-NEC **QP** come-IMP **QP**
'Will (s)he come? / Has (s)he reportedly come? / Does (s)he need to come? / Shall (s)he come?'

(7.48) Hasta **mı**-dır? / Hasta **mı**-ymış?
sick **QP**-JDGe sick **QP**-EPASTe
'Do you think (s)he is sick? / Do they say that (s)he is sick?'

(7.49) Gel-miş **mi**-dir? / Gel-miş **mi**-ydi?
Come-EPAST **QP**-JDGe come-EPAST **QP**-PASTe
'Do you think (s)he has come? / Had (s)he come? '

(7.50) İyi **mi** ol-du? / İyi ol-du **mu**?
good **QP** AUX-PAST good AUX-PAST **QP**
'Did (s)he get better?'

(7.51) Çalış-ıyor **mu** ol-acak / Çalış-ıyor ol-acak **mı**?
work-CONT QP AUX-FUT work-CONT AUX-FUT **QPRT**
'Will (s)he be working?'

7.3 The main strategies of subordination

The most typical strategy of subordination in Turkish involves complementizer suffixes which nominalize a verbal predicate and make the subordinate clause look like a possessive construction. (7.52) and (7.53) below exemplify the two most common complementizers, namely, *-DIG* and *-mA* (labeled, respectively, as 'factive nominalizer' and 'action nominalizer' in Kornfilt 1997). *-(y)AcAG* can also serve as a complementizer when the subordinate clause is future-oriented (7.54):

(7.52) Mehmet'-in gel-**me**-si-ni isti-yor-um.
Mehmet-GEN come-**AN**-POSS-ACC want-CONT-A1SG
'I want Mehmet to come.'

(7.53) Mehmet'-in gel-**diğ**-i-ni bil-iyor-um.
Mehmet-GEN come-**FN**-POSS-ACC know-CONT-A1SG
'I know that Mehmet comes (came) / has (had) come / is (was) coming.'

(7.54) Mehmet'-in gel-**eceğ**-i-ni bil-iyor-um.
Mehmet-GEN come-**FUT**-POSS-ACC know-CONT-A1SG
'I know that Mehmet is going to come'.

When the subordinate clause involves a nominal predicate, complementizers attach to the buffer auxiliary *ol*:

(7.55) Mehmet'-in başarı-lı **ol-duğ**-u-nu bil-m-iyor-du-m.
Mehmet-GEN success-ASC **AUX-FN**-POSS-ACC know-NEG-CONT-PASTe-A1SG
'I didn't know that Mehmet was successful.'

(7.56) Mehmet'-in başarı-lı **ol-ma**-sı-nı ist-iyor-um.
Mehmet-GEN success-ASC **AUX-FN**-POSS-ACC want-CONT-A1SG
'I want Mehmet to be successful.'

(7.57) Mehmet'-in başarı-lı **ol-acağ**-ı-na inan-ıyor-um.
Mehmet-GEN success-ASC **AUX-FUT**-POSS-DAT believe-CONT-A1SG
'I trust that Mehmet will be successful.'

Relative clause formation has two main varieties, usually referred to as 'subject relativization' and 'object relativization' (e.g., Hankamer & Knecht 1976). The former is accomplished by *–(y)An* (7.58) and the latter with the factive nominalizer *–DIG* (7.59):

(7.58) baykuş-u gör-**en** adam
owl-ACC see-**SREL** man
'the man who sees/saw the owl'

(7.59) adam-ın gör-**düğ**-ü baykuş

man-GEN see-**FN**-POSS owl
'the owl that the man sees/saw'

In the examples above, *-mA*, *-DIG,* and *-(y)An* attach to the bare verbal stem and do not allow TAM markers on the predicate. This makes the subordinate clauses ambiguous with respect to temporal qualifications; they get their time reference from the context. Tense and aspect markers can appear in subordinate clauses only with the help of the auxiliary verb *ol*. Even then, the primary time reference of the subordinate clause remains underspecified as to past and present:

(7.60) Mehmet-'in gel-ecek / gel-miş **ol-duğ**-u-nu bil-iyor-um.
Mehmet-GEN come-FUT come-EPAST **AUX-FN**-POSS-ACC know-CONT-A1SG
'I know that Mehmet will (would) / has (had) come.'

(7.61) Mehmet-'in gel-ecek / gel-miş **ol-ma**-sı-na sevin-di-m / sevin-miş-ti-m.
Mehmet-GEN come-FUT come-EPAST **AUX-AN**-POSS-ACC rejoice-PAST-A1SG rejoice-EPAST-PASTe-A1SG
'I am/was happy that Mehmet will (would) / has (had) come.'

(7.62) okul-a gid-ecek / git-miş **ol-an** adam
school-DAT go-FUT go-EPAST **AUX-SREL** man
'The man who will (would) / has (had) gone to school.'

In subject relativization, certain TAM markers can also be used without *ol-an,* as seen in the examples below:

(7.63) boya-n-**acak** pencere
paint-PASS-**FUT** window
'the window to be painted'

(7.64) kuru-**muş** dal-lar
dry-**EPAST** twig-PLU
'the twigs which have dried out / dry twigs'

(7.65) anlaşıl-**ır** bir neden
understand.PASS-**HABG** a reason
'a reason that can be understood / an understandable reason'

A 'when'-clause can be rendered by appending the locative case marker *-(n)DA* to a possessive marker which follows *–DIG* (7.66). Other main strategies include the use of *-(y)IncA*, which is attached to a verbal root and indicates a punctual occurrence (7.67), and *–(y)kAn*, which is attached to either a non-verbal predicate or a bound TAM marker and indicates a temporal range (7.68):

(7.66) Mehmet gel-**diğ-i-nde**…
Mehmet come-**FN-POSS-LOC**
'When Mehmet came/comes…'

(7.67) Mehmet gel-**ince**…
Mehmet come-**(y)IncA**
'As Mehmet came/comes…'

(7.68) Mehmet gel-ir-**ken**…
Mehmet come-**(y)kAn**
'While Mehmet was coming/is coming…'

Conditional protases are marked with –*sA* (COND) or *-(y)sA* (CONDe), which also function as subordination suffixes. Most typically, both the protasis and the apodosis are marked with *-Xr,* as in (7.69) below. TAM markers other than *-Xr* can also appear in the protasis or the apodosis. If this occurs in the apodosis, *-DIr* is used instead of *-Xr*. (7.70) and (7.71) illustrate this:

(7.69) Mehmet gel-**ir-se** ben de gel-**ir**-im.
Mehmet come-**HABG-CONDe** P1SG CONJ come-**HABG**-A1SG
'If Mehmet comes I will come too.'

(7.70) Mehmet akşam yol-a çık-acak-**sa** çoktan ev-e git-miş-**tir**.
Mehmet evening road-DAT leave-FUT-**CONDe** already house-DAT go-EPAST-**JDGe**
'If Mehmet is going to leave in the evening, he must have already gone home.'

(7.71) Neşe makyaj yap-ıyor-**sa** parti-ye gid-ecek-**tir**.
Neşe make-up make-CONT-**CONDe** party-DAT go-FUT-**JDGe**
'If Neşe is putting on a make-up, she is going to go to a party.'

When *-sA* is attached to the verbal root, the protasis indicates a lesser degree of likelihood (7.72). Another way of signaling reduced likelihood for a future event is to use the auxiliary *ol* after the future marker *-(y)AcAG* (7.73). These two strategies illustrate what is often called 'hypothetical' or 'remote' conditionals. If the protasis is presupposed to be false (i.e., an 'irrealis' or 'counterfactual' conditional), *-(y)DI* is attached to *-Xr* in the apodosis, and optionally to *-sA* in the protasis (7.74, 7.75). One last option in counterfactual conditionals (usually in the spoken language) is to use the optative marker *-(y)A* rather than the conditional marker *-sA* (7.76):

(7.72) Mehmet gel-**se** iş-imiz kolaylaş-ır.
Mehmet come-**COND** job-POSS.A1PL get.easy-HABG
'If Mehmet came things would get easier.'

(7.73) Mehmet gel-**ecek** **ol-ur-sa** iş-imiz kolaylaş-ır.
Mehmet come-**FUT** **AUX-HABG-CONDe** job-POSS.A1PL get.easy-HABG
'If Mehmet was to come things would get easier.'

(7.74) Mehmet-'i çağır-**sa-ydı**-n gel-ir-**di**.
Mehmet-ACC invite-**COND-PASTe**-A2SG come-HABG-**PASTe**
'If you had invited Mehmet he would have come.'

(7.75) Mehmet-'i çağır-**sa**-n gel-ir-**di**.
Mehmet-ACC invite-**COND**-A2SG come-HABG-**PASTe**
'If you had invited Mehmet he would have come.'

(7.76) Mehmet'i çağır-**a-ydı**-n gel-ir-**di**.
Mehmet-ACC invite-**OPT-PASTe**-A2SG come-HABG-**PASTe**
'If you had invited Mehmet he would have come.'

7.4 Summary

This chapter introduced the main properties of the Turkish language and its TAM system. It pointed to the difference in TAM coding between verbal and non-verbal predication and formulated the patterns of combination in TAM marking. It finally illustrated the main strategies of subordination.

The next chapter, which constitutes the core of Part II, provides an analysis of the semantic ranges of *-Iyor*, *-Xr*, *-DIr* and *-Ø* on the basis of anchoring categories defined in Part I.

Chapter 8

The ranges of polysemy of *-Xr*, *-DIr*, *-Iyor* and *-Ø* in terms of anchoring categories

Although the agglutinating morphology of Turkish exhibits a highly transparent correspondence between formal and semantic composition, there is no one-to-one correspondance between TAM markers and their uses. In other words, Turkish is not exceptional among the world's languages in that polysemy pervades its TAM system. In particular, markers which primarily qualify as aspect and tense markers are conventionally associated with several temporal and modal uses. This chapter identifies and analyzes the polysemies of the Turkish TAM markers *-Xr, -DIr, -Iyor* and zero-marking (*-Ø*) on the basis of the semantic space of anchoring developed in Part I.

As shown in Chapter 7 above, *-Xr, -DIr, -Iyor* (as well as *-Ø*) can appear on a predicate either on their own or in combination with other bound markers or enclitics. Therefore, a full semantic analysis of *-Xr, -DIr, -Iyor* and *-Ø* in various morphosyntactic contexts requires the identification of the semantic ranges of other TAM markers with which they can combine. This is what is intended in the next section.

8.1 A preliminary analysis of TAM markers other than *-Xr*, *-DIr*, *-Iyor* and *-Ø*

This section spots the main uses of the bound markers *-DI*, *-(y)AcAG* and *-mAktA* and the enclitics *-(y)DI* and *-(y)mIş* in terms of the basic anchoring categories defined in Part I.[110] The analysis here is preliminary to the detailed treatment of *-Xr*, *-DIr*, *-Iyor* and *-Ø* given in the next section.

8.1.1 *-DI* and *-(y)DI*

-DI conveys 'simple past' (or 'past perfective'), which corresponds to ANTERIOR (5.1.2) within the current framework. One example is given in (8.1) below. *-DI* also marks various types of PERFECT (5.1.4) (except PERFECT/persisting/). The example in (8.2) involves PERFECT/result/, (8.3) PERFECT/experience/, and (8.4), PERFECT/recent/. In all its uses, *-DI* presents a propositional content as an item of personal knowledge which is well-integrated to the speaker's current knowledge state (hence often labeled as 'definite past' or 'past of direct experience'), which corresponds to the epistemic category CERTAIN in the present framework:

[110] *-DI* does not combine with any of of *-Xr, -DIr,* or *-Iyor*, but it is included in the analysis here in order to provide a more complete view of the semantic partitioning of the TAM system in Turkish.

(8.1) Ayşe dün önemli bir sınav-a gir-**di**.
Ayşe yesterday important a exam-DAT enter-**DI**
'Ayşe took an important exam yesterday.'

(8.2) Mustafa anahtar-ı-nı kaybet-**ti**.
Mustafa key-POSS-ACC lose-**DI**
'Mustafa has lost his keys.'

(8.3) Ben bu film-i gör-**dü**-m.
I this movie-ACC see-**DI**-A1SG
'I have seen this movie.'

(8.4) Mustafa az önce çık-**tı.**
Mustafa little before leave-**DI**
'Mustafa has just left.'

The enclitic *-(y)DI* can anaphorically refer to a backward-displaced temporal frame ($\text{ANTERIOR}_{\text{ANA}}$; see sections 3.2.2 and 6.2.1) as exemplified in (8.5), (8.6) and (8.7) below. Like *-DI, -(y)DI* in such uses also signals the speakar's personal certainty (CERTAIN):

(8.5) Çocuk-ken ev-den hiç çık-maz-**dı**-m.
child-DTA house-ABL never exit-NEG.HABG-**(y)DI**-A1SG
'When I was a child, I stayed at home all the time.'

(8.6) Sabah sekiz-de çoktan ev-den çık-mış-**tı**-m.
morning eight-LOC long house-ABL leave-EPAST-**(y)DI**-A1SG
'At eight in the morning, I had long left my apartment.'

(8.7) Ahmet'i son gör-düğ-üm-de tatil-e çık-acak-**tı**.
Ahmet last see-FN-POSS-LOC vacation-DAT leave-FUT-**(y)DI**
'When I last saw Ahmet, he was going to leave for a vacation.'

-(y)DI can also indicate an anaphoric reference to a counterfactual epistemic frame, as in (8.8) below. This anaphoric component is expressed in the metalanguage of anchoring categories as $\neg\text{CERTAIN}_{\text{ANA}}$ (see section 6.2.2). *-(y)DI* can also refer back to a past temporal frame and a counterfactual epistemic frame simultaneously (i.e., it cumulatively expresses $\text{ANTERIOR}_{\text{ANA}}$ and $\neg\text{CERTAIN}_{\text{ANA}}$). This is the case, for instance, in the apodosis of (8.9):

(8.8) (Şimdi) Ahmet bura-da ol-sa-**ydı** pikniğ-e gid-er-**di**-k.
now Ahmet here-LOC AUX-COND-**(y)DI** picnic-DAT go-HABG-**(y)DI**-A1PL
'If Ahmet was here now, we would go out for a picnic.'

(8.9) (Dün) hava güzel ol-sa-**ydı** pikniğ-e gid-ecek-**ti**-k.
yesterday weather good AUX-COND-**(y)DI** picnic-DAT go-FUT-**(y)DI**-A1PL
'If the weather had been good (yesterday), we would have gone out for a picnic.'

-(y)DI is also used for expressing counterfactuality in statements of wish (as attached to the conditional marker *-sA*, and typically with the sentence-initial particle *keşke* 'if only') and in deontic judgments (as attached to the necessitative marker *-mAlI*):

(8.10) Keşke bura-da ol-sa-**ydı**-n.
if.only here-LOC be-COND-**(y)DI**-A2SG
'I wish/if only you were/had been here.'

(8.11) İş-in-i zaman-ı-nda bitir-meli-**ydi**-n.
work-POSS.A2SG-ACC time-POSS-LOC finish-NEC-**(y)DI**-A2SG
'You should have finished your work in time.'

In narratives, both *-DI* and *-(y)DI* function anaphorically; i.e., they 'refer back' to the temporal center set by the previous discourse. The former expresses 'sequential past' ($\text{ANTERIOR}_{\text{ANA.OC}}$) and the latter, purely anaphoric past ($\text{ANTERIOR}_{\text{ANA}}$) (see section 6.2.1). The narrative segment below (from Zeyrek 2003) illustrates such uses of these markers. *-DI* in (8.12a), (8.12c) and (8.12d) renders foreground sentences which advance the time-line; it hence expresses $\text{ANTERIOR}_{\text{ANA.OC}}$. In (8.12b), which provides background information at a certain point in the narrative, *-(y)DI* appears to express $\text{ANTERIOR}_{\text{ANA}}$:

(8.12) (a) Sırt-ı-nı ard-ı-nda dizili yün yastık-lar-a bırak-**tı**.
back-POSS-ACC behind-POSS-LOC ordered woolen pillow-PLU-DAT drop-**DI**
'He leaned on the woolen pillows behind him.'

(b) Kahve-den belli belirsiz bir buğu yüksel-iyor-**du**.
coffee-ABL hazy a steam raise-CONT-**(y)DI**
'Steam was coming out of his coffee.'

(c) Uzun, fokurtu-lu bir yudum çek-**ti**.
long bubbling-COM a sip draw-**DI**
'He took a big sip noisily.'

(d) Kahve-nin yüzey-i-ni ört-en köpük bir ağ gibi toplan-**dı**.
coffee-GEN surface-POSS-ACC cover-SREL foam a net like gather-**DI**
'Foam gathered on the coffee just like a net.'
(Zeyrek 2003: 426)

8.1.2 *-mIş* and *-(y)mIş*

ANTERIOR and some types of PERFECT (those except PERFECT/persisting/) are expressed by *-mIş* rather than *-DI* when one of the enclitics *-DIr, -(y)DI* or *-(y)mIş* is present. In (8.13) and (8.14) below, *-mIş* expresses ANTERIOR and PERFECT/result/, respectively. In (8.15), it signals PERFECT/recent/ relative to a temporal center displaced to the past, and in (8.16), ANTERIOR in the context of a message reported from a third party:

(8.13) Homo habilis 2,5 milyon yıl önce evr-il-**miş**-tir.
Homo habilis 2.5 million year before evolve-PASS-**mIş**-JDGe
'Homo habilis evolved 2.5 million years ago.'

(8.14) Şu an itibar-i-yle bütün suçlu-lar tespit ed-il-**miş**-tir.
this moment regard-POSS-COM all criminal-PLU identify-PASS-**mIş**-JDGe
'All of the criminals have been identified by now.'

(8.15) İki yıl önce gel-diğ-imiz-de Hale yeni mezun ol-**muş**-tu.
two year before come-FN-POSS.A1PL-LOC Hale new graduate-**mIş**-PASTe
'When we came two years ago, Hale had just graduated.'

(8.16) Mehmet akşam beş-te gel-**miş**-miş.
Mehmet evening five-LOC come-**mIş**-EPASTe
'(Reportedly) Mehmet came at five in the evening.'

-mIş replaces *-DI* in the existence of the *ol*-series too. In (8.17), it conveys PERFECT/result/ relative to a temporal center displaced to future (which is anaphorically referred to by *ol-acak*). (8.18) illustrates *-mIş* with *ol-abilir* and *ol-malı,* which signal different degrees of epistemic modality. In (8.19), it appears with *ol-sa,* which renders an expression of wish*:*

(8.17) Ekim-'de Hale-'nin okul-u bit-**miş** ol-acak.
October-LOC Hale-GEN school-POSS finish-**mIş** AUX-FUT
'Hale will have graduated in October.'

(8.18) Mehmet gel-**miş** ol-abilir / ol-malı.
Mehmet come-**mIş** AUX-POSS AUX-NEC
'Mehmet may have come / must have come.'

(8.19) Keşke Mehmet gel-**miş** ol-sa.
if.only Mehmet come-**mIş** AUX-COND
'I hope Mehmet has come.'

When *-mIş* is used on its own, it can express a 'state of result' (see section 2.7), as illustrated in (8.20) below. *-mIş* is also commonly used for expressing INFERRED (see sections 4.1.6 and 5.2.4) or hearsay$_{ANA}$ (i.e., a report from a third party; see section 6.2.3) cumulatively with either ANTERIOR (8.21) or PERFECT (8.22):

(8.20) Bu çiçek-ler sol-**muş**.
this flower-PLU fade-**mIş**
'These flowers are wilted.'

(8.21) Ahmet dün gece bura-da kal-**mış**.
Ahmet yesterday night here-LOC stay-**mIş**
'It turns out that / reportedly Ahmet slept here last night.'

(8.22) Ahmet çok iç-**miş**.
Ahmet much drink-**mIş**
'Evidently / reportedly Ahmet has drunk too much.'

-(y)mIş, like its counterpart *-mIş*, can express INFERRED and hearsay$_{ANA}$, as shown in (8.23) and (8.24) below. Unlike *-mIş*, it can signal neither ANTERIOR nor PERFECT in a relative way. But like *-(y)DI*, it can signal anaphoric past (ANTERIOR$_{ANA}$). The hearsay utterances in (8.25) and (8.26) additionally indicate an anaphoric reference to a back-shifted temporal frame:

(8.23) Ahmet uyu-yor-**muş**.
Ahmet sleep-CONT-***mIş***
'(As I have just found out / reportedly) Ahmet is sleeping.'

(8.24) Adam üç yıl-dır iş-siz-Ø-**miş**.
man three year-SINCE job-PRIV-Ø-**(y)mIş**
'(As I infer now / reportedly, the man has been unemployed for three years.'

(8.25) Önceki gün Ahmet istifa ed-ecek-**miş**.
previous day Ahmet resign-FUT-**(y)mIş**
'Reportedly, Ahmet was going to resign the day before.'

(8.26) Mustafa gel-diğ-i-nde Mehmet iki saat önce çık-mış-**mış**.
Mustafa come-FN-POSS-LOC Mehmet two hour before leave-EPAST-**(y)mIş**
'Reportedly, Mehmet had left two hours ago when Mustafa came.'

-mIş and *-(y)mIş* are also used in narratives, either when a speaker indirectly recounts a series of actual events, as in (8.27) below, or in fictive stories such as myths, jokes, and folktales, as in (8.28). Just like *-DI* and *-(y)DI* (section 8.1.1 above), *-mIş* and *-(y)mIş* in narratives anaphorically refer to temporal frames displaced to past (i.e., express ANTERIOR$_{ANA.OC}$ and ANTERIOR$_{ANA}$,

respectively). But they additionally signal a volitional displacement to another (which can also be an anonymous) illocutionary source (hearsay$_{ANA}$):

(8.27) Akşam beş-te evden çık-**mış**. Bir arkadaş-ı-nı gör-ecek-**miş**. Yol-da Ali-'yle karşılaş-**mış**.
evening five-LOC house-LOC leave-**mIş** a friend-POSS-ACC see-FUT-**(y)mIş** way-LOC Ali-COM come.across-**mIş**
'Reportedly, he left at five in the evening. He was going to see a friend of his. On his way, he came across Ali.'

(8.28) Bir var-**mış,** bir yok-**muş**. Bir padişah ile üç kız-ı var-**mış**. Bir gün bu padişah kız-lar-ı-nı baş-ı-na topla-**mış**.
one EXCP-**(y)mIş** one NEG.EXCP-**(y)mIş** a sultan with three doughter-POSS EXCP-**(y)mIş** one day this sultan daughter-PLU-POSS-ACC head-POSS-DAT gather-**mIş**
'Once upon a time, there was a sultan with three daughters. One day this sultan gathered his daughters…'
(From an anonymous folktale)

8.1.3 *-(y)AcAG*

-(y)AcAG expresses either POSTERIOR (section 5.1.3) or PROSPECTIVE (section 5.1.5), as illustrated in (8.29) and (8.30) below. It can have the same functions when it combines with the enclitics *-DIr*, *-(y)DI* or *-(y)mIş* too. For instance, it signals POSTERIOR in (8.31) and PROSPECTIVE in (8.32) and (8.33):

(8.29) Yarın tüm gün çalış-**acağ**-ız.
tomorrow all day work-**(y)AcAG**-A1PL
'We will work all day tomorrow.'

(8.30) Gezi-ye katıl-**acak** mı-sın?
excursion-DAT join-**(y)AcAG** QP-A2SG
'Are you going to join the excursion?'

(8.31) Hale heyecanlı-ydı. Beş-te önemli bir toplantı-ya gir-**ecek**-ti.
Hale excited-PASTe five-LOC important a meeting-DAT enter-**(y)AcAG**-PASTe
'Hale was excited. She would attend a very important meeting at five.'

(8.32) Suçlu mutlaka yakala-n-**acak**-tır.
criminal absolutely capture-PASS-**(y)AcAG**-JDGe
'The criminal is bound to be captured.'

(8.33) Ahmet istifa ed-**ecek**-miş.
Ahmet resign-**(y)AcAG**-EPASTe
'Reportedly, Ahmet is going to resign.'

8.1.4 *-mAktA*

-mAktA typically appears in combination with *-DIr,* as in the first three examples below. In (8.34) it expresses SIMULTANEOUS (section 5.1.1), in (8.35) RECURRENT (section 5.1.6), and in (8.36) PERFECT/persisting/ (section 5.1.4). It can also combine with *-(y)DI* and *-(y)mIş* in these semantic functions. For example, in (8.37) it expresses SIMULTANEOUS relative to a past temporal center. Though not frequently, *-mAktA* can also appear on its own, especially in formal styles. For instance, (8.38) may appear in a curriculum vitae:

(8.34) Ekolojik denge hızla bozul-**makta**-dır.
Ecological balance rapidly deteriorate-**mAktA**-JDGe
'The ecological balance is being destroyed rapidly.'

(8.35) Bakanlık tesis-ler-i düzenli olarak denetle-**mekte**-dir.
ministry establishment-PLU-ACC regular as inspect-**mAktA**-JDGe
'The ministry is regularly inspecting the establishments.'

(8.36) Şirket 15 yıl-dır bilişim sektör-ü-nde faaliyet göster-**mekte**-dir.
company 15 year-SINCE informatics sector-POSS-LOC function-**mAktA**-JDGe
'The company has been active in the informatics sector for 15 years.'

(8.37) Gemi yavaş yavaş kıyı-ya yanaş-**makta**-ydı.
ship slow.RDUP shore-DAT approach-**mAktA**-PASTe
'The ship was slowly approaching the shore.'

(8.38) Orman Bakanlığ-ı-nda müsteşarlık görevi-m-i sürdür-**mekte**-yim.
forest ministry-POSS-LOC undersecretary duty-POSS.A1SG-ACC continue-**mAktA**-A1SG
'I am continuing to work as an undersecretary in the Ministry of Forestry.'

8.1.5 Summary of the semantic associations

The preliminary analysis above suggests the following semantic associations:

- *-DI* can expresses ANTERIOR, $\text{ANTERIOR}_{\text{ANA.OC}}$, PERFECT/result/, PERFECT/experience/ and PERFECT/recent/.
- *-(y)DI* can express $\text{ANTERIOR}_{\text{ANA}}$, $\neg\text{CERTAIN}_{\text{ANA}}$ or a combination of them.
- *-mIş* can expresses ANTERIOR, PERFECT/result/, PERFECT/experience/ and PERFECT/recent/ when used in combination with the enclitics or the *ol*-series. When used as the sole TAM

marker, it can express these temporal categories (as well as ANTERIOR$_{ANA.OC}$) cumulatively with either INFERRED or hearsay$_{ANA}$. It can also express a state of result.

- *-(y)mIş* can express INFERRED or hearsay$_{ANA}$, or a combination of these with ANTERIOR$_{ANA}$.
- *-(y)AcAG* can express POSTERIOR and PROSPECTIVE.
- *-mAktA* can express SIMULTANEOUS, RECURRENT and PERFECT/persisting/.

These results will be used in the next section in delimiting the semantic shares of *-X*r, *-DIr*, *-Iyor* and *-Ø* in morphosyntactic contexts where they combine with these TAM markers.

8.2 Uses of *-Xr, -DIr, -Iyor* and *-Ø* in terms of anchoring categories

This section provides an in-depth analysis of the ranges of polysemy associated with *-Xr, -DIr, -Iyor* and *-Ø* in terms of the basic anchoring categories defined in Part I. Each subsection identifies, illustrates, and analyzes the main conventional uses[111] of these markers, either as they are used as the sole TAM marker on a predicate, or as they combine with other TAM markers.

The analysis is restricted to finite sentences. The uses of the markers in subordinate clauses (e.g., in adverbial components, infinitival arguments, adjective-like relative clauses, complements of mental state verbs, conditional protases, 'when'-clauses, conjunct clauses, etc.) and the causativizing use of *-DIr* (e.g., *yap* 'do', *yap-tır* 'make do') are not included. The combinations of *-Xr* and *-Iyor* with different inflections of the auxiliary *ol* (e.g., *-Xr ol-du*, *-Iyor ol-acak*, *-Iyor ol-sun*) are also excluded.

The analysis starts with the uses of *-Xr* (in verbal predication) and *-DIr* (in non-verbal predication) as they appear on their own on the predicate. It proceeds with the uses of *-Iyor* and *-Ø* as the sole TAM markers on a predicate (*-Ø* will be identified as the counterpart of *-Iyor* in non-verbal predication, in morphosyntactic contexts where a certain semantic category cannot be attributed to any overt TAM marker in a principled way). It then passes on to the uses of *-Xr, -Iyor* and *-Ø* as they combine with the enclitics *-(y)DI* and *-(y)mIş*, and finally to those of *-DIr* as it attaches to the bound markers *-mIş*, *-mAktA*, and *-(y)AcAG.*

The first part of the analysis is rather mechanistic: Each of the identified uses of *-Xr*, *-DIr*, *-Iyor* and *-Ø* (and of their formal combinations) is decomposed into its semantic building-blocks in each of the three domains of anchoring (i.e., one temporal, one epistemic, and one volitional category). As such, each identified use in each subsection is then matched with a generalized hierarchical semantic value expressed in the metalanguage of anchoring categories. Generalizations on the overall semantic ranges of each marker, the semantic categories which are most characteristically

associated with them, issues about their formal and semantic compositionality, and the merits of the present analysis compared to previous studies are only mentioned after each main use of each marker (or a combination of markers) has been matched with a hierarchical semantic value.

8.2.1 Uses of *-Iyor* and *-Ø* as the sole TAM markers

8.2.1.1 *-Xr* or *-DIr*: Temporally unrestricted predication

-Xr (with verbal predicates) and *-DIr* (with non-verbal predicates) typically appear in temporally unrestricted predications, which can either involve 'gnomic' utterances (with generic subjects), as illustrated in (8.39) and (8.40), or 'characterizing' utterances (with specific subjects), as illustrated in (8.41), (8.42) and (8.43):

(8.39) Kedi-ler karanlık-ta gör-**ür**.
cat-PLU darkness-LOC see-**Xr**
'Cats see in the dark.'

(8.40) Tavşan-lar otçul-**dur**.
rabbit-PLU herbivore-**DIr**
'Rabbits are herbivores.'

(8.41) Ay döngü-sü-nü 28 gün-de tamaml-**ar**.
moon cycle-POSS-ACC 28 day-LOC complete-**Xr**
'The moon completes its cycle in 28 days.'

(8.42) Mustafa hayvan-lar-ı çok sev-**er**.
Mustafa animal-PLU-ACC much love-**Xr**
'Mustafa loves animals so much.'

(8.43) Necla dürüst bir insan-**dır**.
Necla honest a person-**DIr**
'Necla is an honest person.'

-Xr and *-DIr* are typically used in proverbs, which are also supposed to express temporally unrestricted facts:

(8.44) Su ak-**ar**, yatağ-ı-nı bul-**ur**.
water flow-**Xr** basin-POSS-ACC find-**Xr**
Lit: 'Water flows and reaches its basin.'

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111 As mentioned in section 1.4.5, conventional uses of a marker (or a combination of markers) can be identified at different levels of granularity. The analysis here singles out typical and relatively frequent uses, omitting those which only obtain in highly specialized contexts.

(8.45) Akıl yaş-ta değil baş-ta-**dır**.
wisdom age-LOC NEGP head-LOC-**DIr**
Lit: 'Wisdom is in the head, not in the age.'

Such utterances present their predicational content as holding independently of any temporal restriction; they do not refer to any particular occurrence (or, series of occurrences) at a specific temporal location (or, in a specific temporal range). In other words, they do not signal any contingent relation to the temporal center. As such, they express the temporal anchoring category ATEMPORAL (sections 4.1.5, 5.1.7).

Gnomic or characterizing utterances with *-Xr* or *-DIr* are not only temporally unrestricted, but are also associated with strong factuality: They present their propositional content as a firmly established fact. In other words, they signal a sense of 'general validity' (rather than one of 'contingent certainty' based on personal knowledge or experience). In the semantic space of anchoring, this epistemic value matches the epistemic category GENERAL FACT (sections 4.1.5, 5.2.7). (When a temporally unrestricted SoA is presented as a truth contingent to the speaker's personal knowledge (CERTAIN or NEW INFORMATION), *-Xr* will be replaced by *-Iyor,* and *-DIr* by *-Ø*; see section 8.2.2.4 below).

The examples (8.39) to (8.45) above are simple assertions which can appear in contexts of personal, interactive communication (rather than general statements with authoritative or official illocutionary forces). They hence straightforwardly match the volitional anchoring category ASSERTED (sections 4.1.6, 5.3.4).

On the basis of the above identified correspondences in the three domains of anchoring, the generalized semantic value of temporally unrestricted utterances with *-Xr* and *-DIr* can be given follows:

(8.46) ASSERTED(GENERAL FACT(ATEMPORAL(SoA))) (*-Xr/-DIr*)

8.2.1.2 *-Xr* or *-DIr*: Persisting perfect

-Xr and *-DIr* (the former in verbal and the latter in non-verbal predication) can also appear in utterances which convey that a certain SoA has held in a period which precedes the time of utterance and is still holding (i.e., in utterances which involve 'persisting perfect'). Below are some examples:

(8.47) Osman beş yıl-dır bu muhit-te otur-**ur**.
Osman five year-SINCE this district-LOC live-**Xr**
'Osman has been living in this district for five years.'

(8.48) Sekiz yaş-ım-dan beri saz çal-**ar**-ım.
eight age-POSS.A1SG-ABL since saz play-**Xr**-A1SG
'I have been playing saz since I was eight.'

(8.49) Bu heykel otuz yıl-dır bura-da-**dır**.
This statue thirty year-SINCE here-LOC-**DIr**
'This statue has been standing here for thirty years.'

(8.50) Mustafa on yıl-dır bu bölüm-de görevli-**dir**.
Mustafa ten year-SINCE this department-LOC employed-**DIr**
'Mustafa has been employed in this department for ten years.'

These sentences all signal the anchoring category labeled as PERFECT/persisting/ in the temporal domain (section 5.1.4). Just like temporally unrestricted utterances with *-Xr* or *-DIr* (section 8.2.1.1 above), they are associated with strong factuality, hence they signal the epistemic category GENERAL FACT. (A persisting perfect is rendered by *-Iyor* or *-Ø* when it involves the speaker's contingent certainty based on personal knowledge, see section 8.2.2.3 below). Since they constitute personal assertions in non-official settings, they are further analyzed as expressing the anchoring category ASSERTED in the volitional domain. Such uses of *-Xr* and *-DIr* are hence associated with the following generalized semantic value:

(8.51) ASSERTED(GENERAL FACT(PERFECT/persisting/(SoA))) (*-Xr/-DIr*)

8.2.1.3 *-Xr*: Prediction

-Xr is commonly used to make predictions about future occurrences, as illustrated below:

(8.52) Ahmet yarın akşam gel-**ir**.
Ahmet tomorrow evening come-**Xr**
'Ahmet will (probably) come tomorrow evening.'

(8.53) Toplantı saat üç gibi bit-**er**.
meeting hour three like finish-**Xr**
'The meeting will (probably) finish at about three o'clock.'

(8.54) Bu yıl mahsül bol ol-**ur.**
This year crop abundant be-**Xr**
'The crop will (probably) be abundant this year.'

Such future-oriented predictions straightforwardly match the temporal anchoring category POSTERIOR (sections 4.1.3, 5.1.3). Since they express a non-certain judgment of the speaker (unlike futures with *-(y)AcAG*, see section 8.1.3), they are also associated with epistemic modality. They hence match the epistemic anchoring category PROBABLE (sections 4.1.4, 5.2.6). When used without

any epistemic adverb, *-Xr* normally expresses a relatively high degree of likelihood, which can be rendered in English by 'probably', as in the translations above. But *-Xr* is also compatible with adverbs which specify different degrees of likelihood (e.g., PROBABLE/low/, PROBABLE/medium/, PROBABLE/high/) as illustrated below:

(8.55) Ali bu gece bir ihtimal-le / belki / herhalde gel-**ir**.
Ali this night one probability-COM maybe probably come-**Xr**
'Ahmet might / may / will probably come tonight.'

-Xr characteristically appears in the apodoses of conditional sentences, again to express the combination of POSTERIOR and PROBABLE, as illustrated below. It also appears in future-oriented protases, as seen in the first example:

(8.56) Ahmet gel-**ir**-se pikniğ-e gid-**er**-iz.
Ahmet come-**Xr**-CONDe picnic-DAT go-**Xr**-A1PL
'If Ahmet comes we will go out for a picnic.'

(8.57) Kar yağ-mış-sa maç iptal ed-il-**ir**.
snow fall-EPAST-CONDe match cancel-PASS-**Xr**
'If it has snowed the match will be cancelled.'

A prediction expressed by *-Xr* can also be about the very near future. For instance, the temporal relation in (8.58) below matches the definition of PROSPECTIVE/imminent/ (section 5.1.5):

(8.58) Ali birazdan gel-**ir**.
Ali soon come-**Xr**
'Ali will (probably) come in a minute.'

This predictive use of *-Xr* almost exclusively appears in non-official settings (typically, in the spoken language), where ASSERTED (rather than GENERAL STATEMENT) is at stake. Below are the generalized semantic values associated with the predictive uses of *-Xr*:

(8.59) ASSERTED(PROBABLE(POSTERIOR(SoA))) (*-Xr*)

(8.60) ASSERTED(PROBABLE(PROSPECTIVE/imminent/(SoA))) (*-Xr*)

8.2.1.4 *-Xr*: Deictic volitional uses: Promises, requests, offers

-Xr has a number of uses in which a deictic (speaker-oriented) volitional component is signaled. These include promises, offers, and requests.

Promises are neither predictions about future events, nor just descriptions of speaker's willingness. They constitute a special type of illocutionary act identified by Searle (1975a) as 'commissive'. Within the semantic framework of anchoring, the commissive illocutionary force is

primarily linked to the indexation of a volitional relation, which is subsumed under the basic anchoring category WANTED (sections 4.1.6, 5.3.5). Although promises with *-Xr* typically designate the speaker as the subject of predication, as in (8.61) and (8.62) below, the reference to the speaker's will is actually offstage (i.e., signaled rather than explicitly designated). This can be demonstrated by promises with non-first person subjects, as in (8.63) and (8.64):

(8.61) Cuma gün-ü uğr-**ar**-ım.
Friday day-POSS visit-**Xr**-A1SG
'I will come by on Friday.'

(8.62) Kitab-ı yarın getir-**ir**-im.
book-ACC tomorrow bring-**Xr**-A1SG
'I will bring the book tomorrow.'

(8.63) Kitap yarın bura-da ol-**ur**.
book tomorrow here-LOC AUX-**Xr**
'The book will be here tomorrow.'

(8.64) Kitab-ı yarın al-**ır**-sınız.
book-ACC tomorrow receive-**Xr**-A2PL
'You will receive the book tomorrow.'

-Xr is also typically used in requests, this time in combination with the question particle *mI* (8.65-8.66). Requests constitute a subcategory of directive utterances, because they express the speaker's appeal to the addressee(s) for undertaking a prescribed action. Like all directives, they primarily signal the speaker's desire for the realization of a projection. As such, they also signal the general category WANTED in a deictic way:

(8.65) Makas-ı ver-**ir** mi-sin (lütfen)?
scissors-ACC give-**Xr** QP-A2SG please
'Will you give me the scissors (please)?'

(8.66) Şura-yı imzal-**ar** mı-sınız (lütfen)?
here-ACC sign-**Xr** QP-A2PL please
'Will you sign here (please)?'

The interrogative construction with *-Xr* can also be used to make an offer. For instance, (8.67) and (8.68) below qualify as offers rather than requests, because they do not urge the addressee(s) to take any action. Offers primarily question the willingness of the addressee(s) (who appear(s) as a participant of the designated SoA). But they also signal the speaker's positive volitional attitude for the expressed event to happen. In other words, offers express the speaker's wish for the

addressee(s) to undertake the designated action (without urging them to do so). As such, they are also analyzed as signaling WANTED in relation to the speaker's immediate volitional state:

(8.67) Yarın akşam opera-ya gid-iyor-uz. Sen de gel-**ir** mi-sin?
tomorrow evening opera-DAT go-CONT-A1PL P2SG CONJ come-**Xr** QP-A2SG?
'We are going to the opera tomorrow evening. Would you like to join?'

(8.68) Çay al-**ır** mı-sınız?
tea take-**Xr** QP-A2PL
'Would you like to have some tea?'

The uses of *-Xr* for promises, requests and offers involve what Bybee, Perkins, and Pagliuca (1994: 179) call 'speaker-oriented' (rather than 'participant-oriented') modality. In terms of the semantic framework of anchoring, what they share is that they signal the volitional category WANTED in a deictic way. Each class additionally indexes different contextual elements and is associated with different conditions of use, which are not pursued here any further. Like most other utterances which entail WANTED (e.g., orders, statements of wish, etc.), they entail POSTERIOR or PROSPECTIVE in the temporal domain, and HYPOTHETICAL in the epistemic domain (see sections 5.1.3, 5.1.5 and 5.2.3):

(8.69) WANTED(HYPOTHETICAL(POSTERIOR(SoA))) (*-Xr*)

(8.70) WANTED(HYPOTHETICAL(PROSPECTIVE(SoA))) (*-Xr*)

8.2.2 Uses of *-Iyor* and *-Ø* as the sole TAM markers

8.2.2.1 *-Iyor* or *-Ø*: Present continuous

In one of its most common uses, *-Iyor* conveys that an event is ongoing (or a state obtaining) at the deictic temporal center (time of utterance). It hence expresses what is traditionally called the 'continuous aspect' in the present time sphere. This use of *-Iyor* is illustrated below with dynamic SoAs (8.71, 8.72, 8.73) and with a stative SoA (8.74). The temporal relation expressed in these utterances matches the temporal anchoring category SIMULTANEOUS (sections 4.1.1, 5.1.1):

(8.71) Ahmet (şimdi/ şu an-da) kahvaltı yap-**ıyor**.
Ahmet now / this moment-LOC breakfast make-**Iyor**
'Ahmet is has having his breakfast (now / at the moment).'

(8.72) Hatice (şimdi/ şu an-da) uy-**uyor**.
Hatice now / this moment-LOC sleep-**Iyor**
'Hatice is sleeping (now / at the moment).'

(8.73) İşçi-ler (şimdi/ şu an-da) duvar-lar-ı boy-**uyor**-lar.
worker-PLU now / this moment-LOC wall-PLU-ACC paint-**Iyor**-A3PL
'The workers are painting the walls (now / at the moment).'

(8.74) (Şimdi) dinlen-mek ist-**iyor**-um.
now rest-INF want-**Iyor**-A1SG
'I want to rest (now).'

This use of *-Iyor* can imply that a state obtains in a relatively extended period which includes the temporal center, as in (8.75). A temporal period can also be explicitly specified by an adverbial component such as *bugün* 'today' (8.76), *bu yıl* 'this month' (8.77), etc.:

(8.75) Ali İstanbul'-da otur-**uyor**.
Ali İstanbul-LOC live-**Iyor**
'Ali is living in Istanbul.'

(8.76) Bugün çalış-m-**ıyor**-um.
today work-NEG-**Iyor**-A1SG
'I am not working today.'

(8.77) O heykel bu yıl Antalya Müzesi-'nde sergile-n-**iyor**.
that sculpture this year Antalya museum-LOC exhibit-PASS-**Iyor**
'That sculpture is being exhibited in the Antalya Museum this year.'

When the predicate is non-verbal, SIMULTANEOUS is conveyed by zero-marking (*-Ø*) rather than *-Iyor*. The examples (8.78), (8.79) and (8.80) below illustrate this with adjectival, locative and existential predicates, respectively. Since all non-verbal predication is stative, *-Ø* can also imply an extension in time around the temporal center, as illustrated in (8.81) and (8.82):

(8.78) Ahmet (şimdi) çok yorgun-**Ø**.
Ahmet now very tired-**Ø**
'Ahment is very tired (now).'

(8.79) (Şu an-da) toplantı-da-**Ø**-yım.
this moment-LOC meeting-LOC-**Ø**-A1SG
'(At the moment) I am in a meeting.'

(8.80) (Şu an-da) para-m yok-**Ø**.
this moment-LOC money-POSS.A1SG NEG.EXCP-**Ø**
'(At the moment) I have no money.'

(8.81) Ali bu ay İstanbul'-da-**Ø**
Ali this month İstanbul-LOC-**Ø**
'Ali is in Istanbul this month.'

(8.82) Ahmet şu sıra-lar çok meşgul-**Ø**
Ahmet this range-PLU very busy-**Ø**
'Ahmet is very busy nowadays.'

The above examples with *–Iyor* (with verbal predication) and *-Ø* (with non-verbal predication) do not involve any sense of uncertainty. They simply signal the speaker's contingent certainty about the truth of the conveyed information (which can be based on her personal experience, observation, or otherwise directly acquired knowledge). As such, they express the epistemic anchoring category CERTAIN (sections 4.1.2, 5.2.1) in the epistemic domain. Since they are also descriptive utterances with simple assertive force, they are also analyzed as entailing the volitional category ASSERTED in their overall semantic values. They are hence characterized by the following generalized semantic value:

(8.83) ASSERTED(CERTAIN(SIMULTANEOUS(SoA))) (*-Iyor/-Ø*)

-Iyor and *-Ø* can also convey a piece of information which is not fully assimilated to the speaker's knowledge state, i.e., in contexts for NEW INFORMATION (sections 4.1.1, 5.2.1) rather than CERTAIN. Such cases typically obtain in contexts where a speaker has just perceived an ongoing SoA. For instance, (8.84) can be uttered just upon seeing Ahmet approaching, and (8.85) upon inspecting a room. As shown in section 5.2.1, NEW INFORMATION is generally (but not necessarily) accompanied by the indexation of the speaker's surprise. In Turkish, surprise (or 'mirativity') can be indicated by intonation alone, by certain interjections (such as *aa* 'oh'), or by formulaic phrases (such as *şu işe bak* 'look at that'; *vay be* 'wow', etc.). (8.86) and (8.87) express the speaker's surprise, respectively upon seeing her addressee smoking and upon suddenly noticing Mustafa:

(8.84) Bak, Ahmet gel-**iyor**.
look Ahmet come-**Iyor**
'Look, Ahmet is coming.'

(8.85) Bura-da kimse yok-**Ø**.
here-LOC nobody NEG.EXCP-**Ø**
'There isn't anybody here.'

(8.86) Sen sigara iç-**iyor**-sun!
you smoke-**Iyor**-A2SG
'You are smoking!'

(8.87) Aa! Mustafa da bura-da-**Ø**!
oh Mustafa CONJ here-LOC-**Ø**
'Oh! Mustafa is also here!'

Such uses of *-Iyor* and *-Ø* can be coupled with the following generalized semantic value:

(8.88) ASSERTED(NEW INFORMATION(SIMULTANEOUS(SoA))) (*-Iyor/-Ø*)

8.2.2.2 *-Iyor*: Repeated occurrences

-Iyor can express repeated occurrences in a temporal period around the deictic temporal center. Such utterances are optionally accompanied by an adverb of frequency:

(8.89) Şimdi-ler-de (sık sık) balığa çık-**ıyor**-um.
now-PLU-LOC often fish-**Iyor**-A1SG
'I'm going fishing quite often these days.'

(8.90) Ayşe ders-ler-e (hep) geç kal-**ıyor**.
Ayşe class-PLU-DAT always late stay-**Iyor**
'Ayşe is always being late for classes.'

(8.91) Hasan (arada bir) uğr-**uyor**.
Hasan occasionally drop.by-**Iyor**
'Hasan drops by occasionally.'

This use of *-Iyor* differs from that in which SIMULTANEOUS is signaled, in that the speaker tells nothing about whether or not the designated SoA actually occurs at the time of utterance. The temporal relation involved in such utterances (repeated occurrences in to a certain period) matches the basic anchoring category called RECURRENT (sections 4.1.4, 5.1.6). This use of *-Iyor* also involves speaker's personal certainty (CERTAIN) and a simple assertive force (ASSERTED). Hence, it matches the following generalized semantic value:

(8.92) ASSERTED(CERTAIN(RECURRENT(SoA))) (*-Iyor*)

Although not frequently, *-Iyor* can also express the immediate discovery of a repeated occurrence (a combination of RECURRENT and NEW INFORMATION). This is illustrated in (8.93) below, which can be uttered, e.g., by a speaker who is surprised to have encountered her addressee for the third time in a weak. (8.94) gives the generalized semantic value associated with such uses:

(8.93) Bugün-ler-de ne kadar sık karşılaş-**ıyor**-uz!
today-PLU-LOC what degree often come.across-**Iyor**-A1PL
'How often we are coming across nowadays!'

(8.94) ASSERTED(NEW INFORMATION(RECURRENT(SoA))) (*-Iyor*)

8.2.2.3 *-Iyor* or *-Ø*: Persisting perfect

In section 8.2.1.2, it was shown that the perfect of persisting situation (PERFECT/persisting/) can be expressed by *-Xr* or *-DIr*. The same temporal relation can be signaled by *-Iyor* (with verbal predicates) or *-Ø* (with non-verbal predicates):

(8.95) Osman beş yıl-dır bu muhit-te otur-**uyor**.
Osman five year-SINCE this district-LOC live-**Iyor**
'Osman has been living in this district for five years.'

(8.96) Ali iki saat-tir sen-i bekl-**iyor**.
Ali two hour-SINCE you-ACC wait-**Iyor**
'Ali has been waiting for you for two hours.'

(8.97) Sekiz yaş-ım-dan beri saz çal-**ıyor**-um.
eight age-POSS.A1SG-ABL since saz play-**Iyor**-A1SG
'I have been playing saz since I was eight.'

(8.98) Üç ay-dır iş-siz-**Ø**-im.
three month-SINCE job-PRIV-**Ø**-A1SG
'I have been unemployed for three months.'

(8.99) Bu bina otuz yıl-dır bura-da-**Ø**.
this building thirty year-SINCE here-LOC-**Ø**
'This building has been standing here for thirty years.'

-Xr/-DIr and *-Iyor/-Ø* can appear in persisting perfects which specify identical temporal values. This can be seen by comparing the following examples (replicated from section 8.2.1.2) with (8.95) and (8.99) above:

(8.100) Osman beş yıl-dır bu muhit-te otur-**ur**.
Osman five year-SINCE this district-LOC live-**Xr**
'Osman has been living in this district for five years.'

(8.101) Bu heykel otuz yıl-dır bura-da-**dır**.
this statue thirty year-SINCE here-LOC-**DIr**
'This statue has been standing here for thirty years.'

The difference between a persisting perfect with *-Xr/-DIr* and one with *-Iyor/-Ø* is basically epistemic: While *-Xr* and *-DIr* present a proposition as a well-established, objective fact (GENERAL FACT), *-Iyor* and *-Ø* reflect the speaker's contingent certainty based on her personal knowledge

(CERTAIN).[112] The use of *-Iyor* and *-Ø* in expressing persisting perfect is hence associated with the following generalized semantic value:

(8.102) ASSERTED(CERTAIN(PERFECT/persisting/(SoA))) (*-Iyor/-Ø*)

Though not too often, one can discover upon some evidence that a situation has been holding for some time. For instance, a speaker who is surprised to have found out that a man has been standing on a corner for two hours can express her surprise by uttering (8.103) or (8.104), both of which signal a combination of PERFECT/persisting/ and NEW INFORMATION (with surprise). Note that *-Xr* and *-DIr* are totally incongruous in this context:

(8.103) Aa! Adam hala aynı yer-de dur-**uyor**! / #dur-**ur**!
oh man still same place-LOC stand-**Iyor** stand-**Xr**
'Oh! The man is still standing in the same place!'

(8.104) Aa! Adam hala aynı yer-de-**Ø**! / #yer-de-**dir**!
oh man still same place-LOC-**Ø** place-LOC-**DIr**
'Oh! The man is still in the same place!'

These last examples can be associated with the following generalized semantic value:

(8.105) ASSERTED(NEW INFORMATION(PERFECT/persisting/(SoA))) (*-Iyor/-Ø*)

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[112] One might insist on explaining the difference between persisting perfects with *-Xr/-DIr* and those with *-Iyor/-Ø* in temporal terms, given that *-Xr* and *-DIr* are generally incongruous with relatively short periods:

(i) Sabah-tan beri sen-i bekl-**iyor**-um / ?bekl-**er**-im.
morning-ABL since P2SG-ACC wait-**Iyor**-A1SG wait-**Xr**-A1SG
'I have been waiting for you since the early morning.'

(ii) Telefon on dakika-dır meşgul-**Ø** / ?meşgul-**dür**.
phone ten minute-SINCE occupied-**Ø** occupied-**DIr**
'The line has been busy for ten minutes.'

However, attributing the difference to temporality alone cannot explain why *–Iyor* is possible, while *-Xr* may not be appropriate, with relatively long periods, as in (iii) and (iv) below:

(iii) Anlaşıl-an bu dere-de on yıl-dır balık yaşa-m-**ıyor** / ?yaşa-**maz**.
understand.PASS-SREL this stream-LOC ten year-SINCE fish live-NEG-**Iyor** live-NEG.**Xr**
'As I understand, no fish has been living in this stream for ten years.'

(iv) Demek ki Ali uzun zaman-dır iş-siz-**Ø** / ?iş-siz-**dir**.
thus Ali long time-since job-PRIV-**Ø** job-PRIV-**DIr**
'Thus, Ali has been unemployed for very long.'

The fact that *-Xr* cannot be used with relatively short periods can be explained with reference to general cognitive factors: A SoA will not be taken as a general fact unless it has been the case for a sufficiently long period of time. In other words, events which have occurred a short time ago are not likely to be adopted as well-established facts. But the reverse is not necessarily true: Events or situations that have been the case for relatively long periods do not necessarily become general facts.

8.2.2.4 *-Iyor* or *-Ø*: Temporally unrestricted predication with contingent certainty

As shown in section 8.2.1.1, temporally unrestricted SoAs are normally expressed by *-Xr* (with verbal predicates) and *-DIr* (with non-verbal predicates). But *-Iyor* replaces *-Xr* and *-Ø* replaces *-DIr* when the speaker presents a temporally unrestricted (ATEMPORAL) predication as a matter of personal certainty (CERTAIN) rather than as an item of general knowledge (GENERAL FACT). For instance, a speaker who has discovered the moon's cycle by her own observations would utter (8.107) rather than (8.106). Similarly, someone who has come to know Mustafa or Necla by personal experience would utter (8.109) and (8.111) rather than (8.108) and (8.110):

(8.106) Ay döngü-sü-nü 28 gün-de tamaml-**ar**. (Replicated from section 8.2.1.1)
moon cycle-POSS-ACC 28 day-LOC complete-**Xr**
'The moon completes its cycle in 28 days.'

(8.107) Ay döngü-sü-nü 28 gün-de tamaml-**ıyor.**
moon cycle-POSS-ACC 28 day-LOC complete-**Iyor**
'The moon completes its cycle 28 days.'

(8.108) Mustafa hayvan-lar-ı çok sev-**er**. (Replicated from section 8.2.1.1)
Mustafa animal-PLU-ACC much love-**Xr**
'Mustafa loves animals so much.'

(8.109) Mustafa hayvan-lar-ı çok sev-**iyor**.
Mustafa animal-PLU-ACC much love-**Iyor**
'Mustafa loves animals so much.'

(8.110) Necla dürüst bir insan-**dır**. (Replicated from section 8.2.1.1)
Necla honest a person-**DIr**
'Necla is an honest person.'

(8.111) Necla dürüst bir insan-**Ø**.
Necla honest a person-**Ø**
'Necla is an honest person.'

The pairs given above are identical in the temporal and volitional values they express, i.e., ATEMPORAL and ASSERTED respectively. But here too, while *-Xr/-DIr* endows the informational content with a sense of well-established, general validity (GENERAL FACT), *-Iyor/-Ø* presents it merely as a matter of personal certitude (CERTAIN). The generalized semantic value of the above exemplified utterances with *-Iyor/-Ø* can hence be rendered as follows:

(8.112) ASSERTED(CERTAIN(ATEMPORAL(SoA))) (*-Iyor/-Ø*)

-Xr/-DIr will also be replaced by *-Iyor/-Ø* when the speaker wants to express a temporally unrestricted SoA as a new discovery (i.e., as NEW INFORMATION, which, unlike CERTAIN, presents a piece of information as not well-assimilated to the current knowledge state). This is best illustrated by utterances which indicate the speaker's surprise. For instance (8.113) could be uttered by a scientist who has just discovered that lizards have night vision, and (8.114) by someone who is astonished upon encountering a very tall man. (If the speaker wanted to emphasize a change in her knowledge state due to her immediate discovery, she would affix *-(y)mIş* to *-Iyor* in order to signal INFERRED rather than NEW INFORMATION; see section 8.2.3.5.)

(8.113) Kertenkele-ler karanlık-ta gör-**üyor**!
lizard-PLU darkness-LOC see-**Iyor**
'Lizards see in the dark!'

(8.114) Ne kadar uzun bir adam-**Ø**!
what degree tall a man-**Ø**
'How tall that man is!'

As mentioned in section 5.2.1, NEW INFORMATION is also there when the speaker emphasizes the 'newness' or 'immediate significance' of a piece of information relative to the knowledge state of her addressee(s). For instance, the temporally unrestricted statements below would normally (e.g., in a scientific communication) be rendered by *-Xr* and *-DIr* respectively. *-Iyor* and *-Ø* are chosen here in order to emphasize the sense of epistemic immediacy (i.e., in order to 'foreground' the conveyed information):

(8.115) Uzun süre-li alkol tüketim-i beyin hücre-ler-i-ne zarar ver-**iyor**.
long duration-COM alcohol consumption-POSS brain cell-PLU-POSS-DAT damage-**Iyor**
'Long-term alcohol consumption damages brain cells.'

(8.116) Böcek tür-ler-i-nin çeşitliliğ-i sağlıklı bir ekosistem-in gösterge-si-**Ø**.
insect species-PLU-POSS-GEN diversity-POSS healthy a ecosystem-GEN sign-POSS-**Ø**
'The diversity of insect species is an indication of the health of an ecosystem.'

The following generalized semantic value represents the use of *-Iyor/-Ø* in expressing temporally unrestricted predications with epistemic immediacy:

(8.117) ASSERTED(NEW INFORMATION(ATEMPORAL(SoA))) (*-Iyor/-Ø*)

8.2.2.5 *-Iyor* or *-Ø*: Future with immediate epistemic significance

-Iyor (with verbal predicates) and *-Ø* (with non-verbal predicates) appear in what is often called 'scheduled futures':

(8.118) Tren saat üç-te kalk-**ıyor**.
Train hour three-LOC take.off-**Iyor**
'The train leaves at three o'clock.'

(8.119) Bu akşam Ahmet-'ler gel-**iyor**.
this evening Ahmet-PLU come-**Iyor**
'This evening Ahmet and his family are coming to us.'

(8.120) Perşembe sabah-ı İstanbul'-da-**Ø**-yız.
Thursday morning-POSS Istanbul-LOC-**Ø**-A1PL
'We are in Istanbul in Thursday morning.'

Future time reference (POSTERIOR) is most typically expressed in Turkish by *-(y)AcAG* (when personal certainty is involved, see section 8.1.3), or by *-Xr* (when epistemic modality is at stake, see section 8.2.1.3). Futures with *-Iyor* or *-Ø* differ from those with *-(y)AcAG* or *-Xr* in that they place emphasis on the immediate informative value of the proposition they express. In other words, they present their informative content as an 'immediately significant' piece of information. In most cases, this sense of epistemic immediacy is linked with the assumed 'newness' of the information relative to the addressee(s) (as would normally be the case in (8.118-8.120) above). 'Epistemic immediacy' can also be relative to the speaker herself, in case the expressed piece of information has just been discovered and not yet been fully assimilated to her current knowledge state. For instance, (8.118) above could also be uttered by a speaker who has just checked the train schedules, and (8.119) by one who has just received an phone call announcing a prospective visit. As predicted by this account, *-Iyor* and *-Ø* will be preferred in expressing future events with an element of surprise. For instance, a speaker who has just checked the train schedule and found out that the departure hour is unexpectedly early would prefer *-Iyor* to *-(y)AcAG* or *-Xr*:

(8.121) Ol-amaz! Tren saat üç-te kalk-**ıyor**! / ?kalk-**acak**! / #kalk-**ar**!
be-NEG.HABG train hour three-LOC take.off-**Iyor** take.off-**(y)AcAG** take.off-**Xr**
'Oh God! The train leaves at three o'clock!'

-Iyor and *-Ø* can also express 'imminent future' (PROSPECTIVE/imminent/; see section 5.1.5), when the conveyed information is new to the speaker (and/or presented as new to the addressee(s)). Below are two examples:

(8.122) Çabuk ol-un, film başl-**ıyor**.
quick be-IMP.A1PL movie start-**Iyor**
'Be quick! The movie's gonna start.'

(8.123) Çorba birazdan hazır-**Ø**.
soup soon ready-**Ø**
'The soup's gonna be ready in a minute.'

The immediate epistemic significance of *-Iyor* futures is also demonstrated by information seeking questions. *-Iyor* is particularly apt in questions which are intended to recollect currently relevant information:

(8.124) Şimdi gezi-ye kim gel-**iyor**, kim gel-m-**iyor**?
now excursion-DAT who come-**Iyor** who come-NEG-**Iyor**
'Now, who is coming to the excursion and who not?'

In summary, *-Iyor* and *-Ø* are used in future utterances (i.e., those which signal POSTERIOR or PROSPECTIVE/imminent/) when the conveyed piece of information is construed as 'immediate evidence' either relative to the knowledge state of the speaker herself or to that of the addressee(s) (in case the conveyed piece of information is already well-known to the speaker). As such, they are analyzed as signaling NEW INFORMATION in the epistemic domain. Since these utterances are simple assertions, they also involve ASSERTED in their highest (volitional) layer of anchoring. The generalized semantic values associated with the 'scheduled future' and 'imminent future' uses of *-Iyor* and *-Ø* are hence as follows:

(8.125) ASSERTED(NEW INFORMATION(POSTERIOR(SoA))) (*-Iyor/-Ø)*

(8.126) ASSERTED(NEW INFORMATION(PROSPECTIVE/imminent/(SoA))) (*-Iyor/-Ø)*

8.2.2.6 *-Iyor*: Explicit performatives

-Iyor typically appears in explicit performatives. For instance, (8.127) can be uttered by an official to perform a civil marriage, (8.128) by a chairman to launch a session, (8.129) by a military commander to issue a command, and (8.130) by someone who raises an objection:

(8.127) Siz-i karı koca ilan ed-**iyor**-um.
P2PL-ACC wife husband declare-**Iyor**-A1SG
'I declare you husband and wife.'

(8.128) Oturum-u aç-**ıyor**-um.
session-ACC open-**Iyor**-A1SG
'I open up the session.'

(8.129) Bura-ya gel-me-n-i emred-**iyor**-um!
here-DAT come-AN-POSS.A2SG-ACC order-**Iyor**-A1SG
'I order you to come here!'

(8.130) İtiraz ed-**iyor**-um!
object-**Iyor**-A1SG
'I object!'

-Xr can also appear in explicit performatives, but only with a strictly limited number (a closed set) of verbs which are typically used in official letters, as illustrated in (8.131) and (8.132) below. In the spoken register, one finds *-Xr* only in certain formulaic expressives, e.g., those by which one gives thanks (8.133) or congratulates someone (8.134):

(8.131) Bilgi-ler-iniz-e arz ed-**er**-im.
information-PLU-POSS.A2PL-DAT offer-**Xr**-A1SG
'I offer this point to your information.'

(8.132) Gereğ-i-nin yap-ıl-ma-sı-nı rica ed-**er**-im.
requirement-POSS-GEN do-PASS-AN-POSS-ACC request-**Xr**-A1SG
'I request you to undertake the necessary action.'

(8.133) Teşekkür ed-**er**-im.
thank-**Xr**-A1SG
'Thank you.'

(8.134) Tebrik ed-**er**-im!
congratulate-**Xr**-A1SG
'Congratulations!'

Within the semantic framework of anchoring categories, explicit performatives are taken as a subtype of declarations, in which the speaker declares her immediate (illocutionary) intention. Like all other declarations, they signal the volitional anchoring category IMMEDIATE CONTRIBUTION (sections 4.1.1 and 5.3.1) in the highest layer of anchoring, and entail NEW INFORMATION and SIMULTANEOUS in the epistemic and temporal domains (see also example (6.62) in section 6.3):

(8.135) IMMEDIATE CONTRIBUTION(NEW INFORMATION(SIMULTANEOUS(SoA))) (*-Iyor*)

8.2.3 Uses of *-Xr* and *-Iyor* in combination with the enclitics *-(y)DI* and *-(y)mIş*

This section identifies the main uses of the combinations of the bound markers *-Xr* and *-Iyor* with the enclitics *-(y)DI* and *-(y)mIş*, namely, *-Xr-(y)DI*, *-Xr-(y)mIş*, *-Iyor-(y)DI*, and *-Iyor-(y)mIş*. Many of the temporal dimensions associated with *-Xr* and *-Iyor* used as the sole TAM markers can also be observed when they combine with these two enclitics.

8.2.3.1 *-Xr-(y)DI*: Temporally unrestricted predication in a past temporal frame

In section 8.1.1, *-(y)DI* was shown to be a marker of anaphoric past (ANTERIOR$_{ANA}$). Accordingly, *-Xr-(y)DI* can be used for expressing a temporally unrestricted predication from the perspective of a back-shifted temporal center, e.g., in utterances which mention a once-typical behavior of a subject:

(8.136) Ali eskiden çok sigara iç-**er-di**.
Ali formerly much smoke-**Xr-(y)DI**
'Ali used to smoke too much.'

(8.137) Çocuk-ken ev-den hiç çık-**maz-dı**-m.
child-DTA house-ABL never leave-**NEG.Xr-(y)DI**-A1SG
'When I was a child, I never left home.'

In the examples above, the temporal expressions *eskiden* and *çocukken* trigger temporal displacements to past. In both sentences, *-(y)DI* anaphorically refers to the back-shifted temporal frames. *-Xr* signals no specific temporal restriction for the designated SoAs within these frames. In other words, both utterances signal the anchoring category ATEMPORAL relative to past frames rather than expressing contingent occurrences. When the predicate is non-verbal, zero-marking (*-Ø*) appears rather than *-Xr* or *-DIr*:

(8.138) Mustafa çok akıllı bir insan-**Ø-dı**.
Mustafa very clever a person-**Ø-(y)DI**
'Mustafa was a very clever person.'

-(y)DI in the examples above not only conveys an anaphoric reference a past temporal frame (ANTERIOR$_{ANA}$), but also signals personal certainty (CERTAIN) (see section 8.1.1) and assertive illocutionary force (ASSERTED):

(8.139) ASSERTED(CERTAIN(ANTERIOR$_{ANA}$(ATEMPORAL(SoA))) (*-Xr-(y)DI*/*-Ø-(y)DI*)

8.2.3.2 *-Xr-(y)DI*: Counterfactual prediction

As shown in section 8.1.1, *-(y)DI* also marks counterfactuality. In the counterfactual conditional in (8.141) below the conditional marker *-sA* triggers an epistemic displacement and *-(y)DI* qualifies the displaced epistemic frame as 'contrary to fact'. *-(y)DI* on the apodosis anaphorically refers to this counterfactual epistemic frame (¬CERTAIN$_{ANA}$). Just as *-Xr* in (8.140) below signals a combination of POSTERIOR and PROBABLE in a 'hypothetical' epistemic frame, *-Xr-(y)DI* in (8.141) signals the same combination in a 'counterfactual' epistemic frame:

(8.140) Ahmet gel-ir-se pikniğ-e gid-**er**-iz.
Ahmet come-**Xr**-CONDe picnic-DAT go-**Xr**-A1PL
'If Ahmet comes we will go out for a picnic.'

(8.141) Ahmet bura-da ol-sa-**ydı** pikniğ-e gid-**er-di**-k.
Ahmet here-LOC be-COND-**(y)DI** picnic-DAT go-**Xr-(y)DI**-A1PL
'If Ahmet was here we would go out for a picnic.'

The semantic value of the apodoses of such counterfactual conditionals can be generalized as follows:

(8.142) ASSERTED(¬CERTAIN$_{ANA}$(PROBABLE(POSTERIOR(SoA)))) *(-Xr-(y)DI*)

As already stated in section 8.1.1, *-(y)DI* in counterfactual conditionals can refer to either a present (deictic) or a past (displaced) temporal frame. In other words, it can function both as a temporal and an epistemic anaphor (¬CERTAIN$_{ANA}$ + ANTERIOR$_{ANA}$), as shown below:

(8.143) (Dün) Ahmet gel-se-**ydi** pikniğ-e gid-**er-di**-k.
yesterday Ahmet come-COND-**y(DI)** picnic-DAT go-**Xr-(y)DI**-A1PL
'If Ahmet had come (yesterday), we would have gone out for a picnic.'

The generalized semantic value of the apodoses of such conditionals can be rendered in the metalanguage of anchoring categories as follows:

(8.144) ASSERTED(¬CERTAIN$_{ANA}$(PROBABLE(ANTERIOR$_{ANA}$(POSTERIOR(SoA)))) (*-Xr-(y)DI*)

8.2.3.3 *-Xr-(y)mIş*: Uses with hearsay

In section 8.1.2, it was shown that one of the main uses of the enclitic *-(y)mIş* is 'hearsay' (report from a third illocutionary source), which is represented in the metalanguage of anchoring categories as hearsay$_{ANA}$. While *-Xr* is used for deictic assertions of temporally unrestricted facts (which signal ATEMPORAL + GENERAL FACT; see section 8.2.1.1 above), *-Xr-(y)mIş* is used for expressing such facts as indirect illocutions. For instance, (8.145) can be used in quoting a statement from an encyclopedia, and (8.146), in replicating what a third person has told about Ahmet:

(8.145) Hipopotam insan-dan daha hızlı koş-**ar-mış**.
hippopotamus human-ABL more fast run-**Xr-(y)mIş**
'Reportedly, a hippopotamus runs faster than a human.'

(8.146) Ahmet hiç kahve iç-**mez-miş**.
Ahmet never coffee drink-**NEG.Xr-(y)mIş**
'Reportedly, Ahmet never drinks coffee.'

Although temporally unrestricted facts are normally expressed by *-DIr* with non-verbal predicates (see section 8.2.1.1 above), *-DIr* gives way to zero-marking (*-Ø*) in hearsay utterances with *-(y)mIş*. Below are two examples. (8.147) involves a gnomic, and (8.148), a characterizing utterance:

(8.147) Bir mayıssineği-nin ömr-ü birkaç saat-**Ø-miş**.
a mayfly-GEN lifetime-POSS few hour-**Ø-(y)mIş**
'Reportedly, the lifetime of a mayfly is only a few hours.'

(8.148) Mustafa çok zeki-**Ø-ymiş**.
Mustafa very clever-**Ø-(y)mIş**
'Reportedly, Mustafa is a very clever person.'

Just like *-Xr* can be used on its own for deictic predictions (POSTERIOR + PROBABLE; see section 8.2.1.3 above), *-Xr-(y)mIş* can report a prediction of a third-party:

(8.149) Ahmet yarın gel-**ir-miş**.
Ahmet tomorrow come-**Xr-(y)mIş**
'Reportedly, Ahmet will come tomorrow.'

The uses of *-Xr-(y)mIş* and *-Ø-(y)mIş* illustrated in (8.145-8.148) match the generalized semantic value given in (8.150), and that of *-Xr-(y)mIş* illustrated in (8.149), the one given in (8.151):

(8.150) $\text{hearsay}_{\text{ANA}}$(ASSERTED(GENERAL FACT(ATEMPORAL(SoA))) (*-Xr-(y)mIş/-Ø-(y)mIş*)

(8.151) $\text{hearsay}_{\text{ANA}}$(ASSERTED(PROBABLE(POSTERIOR(SoA))) (*-Xr-(y)mIş*)

Just as *-(y)DI* can be relative to the present or a past temporal frame in its counterfactual uses, *-(y)mIş* is alike in its use for hearsay. In the examples below, one with a verbal and one with a non-verbal predicate, *-(y)mIş* expresses anaphoric past in addition to anaphoric illocution. The generalized semantic value associated with such uses is given in (8.154).

(8.152) Ali eskiden çok sigara iç-**er-miş**.
Ali formerly much smoke-**Xr-(y)mIş**
'Reportedly, Ali smoked heavily in the past.'

(8.153) Mustafa çocuk-ken çok zeki-**Ø-ymiş**.
Mustafa child-DTA very clever-**Ø-(y)mIş**
'Reportedly, Mustafa was very clever when he was a child.'

(8.154) $\text{hearsay}_{\text{ANA}}$(ASSERTED(CERTAIN($\text{ANTERIOR}_{\text{ANA}}$(ATEMPORAL(SoA))))) (*-Xr-(y)mIş/-Ø-(y)mIş*)

8.2.3.4 *-Iyor-(y)DI*: Uses with temporal displacement to past

The combination of *-Iyor* (with verbal predicates) or *-Ø* (with non-verbal predicates) with the anaphoric past marker *-(y)DI* can express SIMULTANEOUS and PERFECT/persisting/relative to a temporal center displaced to past. (8.155-8.158) are examples with SIMULTANEOUS, and (8.159) and (8.160), with PERFECT/ persisting/:

(8.155) Gel-diğ-im-de Ahmet yemek y-**iyor-du**.
come-FN-POSS.A1SG-LOC Ahmet meal eat-**Iyor-(y)DI**
'When I came Ahmet was having his meal.'

(8.156) Ara-dığ-ın-da sen-i düşün-**üyor-du**-m**.**
call-FN-POSS.A2SG-LOC 2SG-ACC think-**Iyor-(y)DI**-A1SG
'I was thinking about you when you called me.'

(8.157) Dün saat üç-te meşgul-**Ø-dü**-m.
yesterday hour three-LOC busy-**Ø-(y)DI**-A1SG
'I was busy yesterday at three o'clock'.

(8.158) Oya çık-tığ-ı-nda Ahmet büro-da-**Ø-ydı**.
Oya leave-FN-POSS-LOC Ahmet office-LOC-**Ø-(y)DI**
'When Oya left Ahmet was in the office.'

(8.159) O-nu tanı-dığ-ım-da onbeş yıl-dır sigara iç-**iyor-du**
P3SG-ACC know-FN-POSS.A1SG-LOC fifteen year-SINCE smoke-**Iyor-(y)DI**
'When I met him, he had been smoking for fifteen years.'

(8.160) Teklif gel-diğ-i-nde beş ay-dır iş-siz-**Ø-di**-m.
offer come-FN-POSS-LOC five month-SINCE job-PRIV-**Ø-(y)DI**-A1SG
'When the offer was made I had been unemployed for five months.'

The semantic values associated with the above illustrated uses are given below:

(8.161) ASSERTED(CERTAIN(ANTERIOR$_{ANA}$(SIMULTANEOUS(SoA)))) (*-Iyor-(y)DI/-Ø-(y)DI*)

(8.162) ASSERTED(CERTAIN(ANTERIOR$_{ANA}$(PERFECT/persisting/(SoA)))) (*-Iyor-(y)DI/-Ø-(y)DI*)

-Iyor-(y)DI can also express RECURRENT relative to a backward-shifted temporal center, as shown in (8.163) below. The generalized semantic value associated with this use is given in (8.164):

(8.163) O zaman-lar hafta-da üç gün yüz-**üyor-du**-m.
that time-PLU week-LOC three day swim-**Iyor-(y)DI**-A1SG
'At that time I would swim three times a week.'

(8.164) ASSERTED(CERTAIN(ANTERIOR$_{ANA}$(RECURRENT(SoA)))) (*-Iyor-(y)DI*)

8.2.3.5 *-Iyor-(y)mIş*: Uses with inference or hearsay

In section 8.1.2, it was shown that *-(y)mIş* can mark an inference based on evidence (INFERRED). The combination *-Iyor-(y)mIş* can be used to signal INFERRED with SIMULTANEOUS, in contexts where the speaker has just encountered a proof for a presently ongoing SoA. The evidence in such contexts is often 'direct': The perception (typically visual or auditory) of an event or state is construed as evidence for that event or state (see INFERRED/direct/ in section 5.2.4). For instance, a person who enters a room and finds Ahmet sleeping can utter (8.165). Or, a speaker who has just noticed blood on her finger can utter (8.166). In such inferential contexts, the speaker may or may not additionally signal an element of unexpectedness or surprise, which is often conveyed by intonation in Turkish and represented in the examples with an exclamation sign:

(8.165) Ahmet uyu-**yor-muş**./!
Ahmet sleep-**Iyor-mIş**
'Ahmet is sleeping./! (I have just found out.)

(8.166) Parmağ-ım kan-**ıyor-muş**./!
finger-POSS.A1SG bleed-**Iyor-(y)mIş**
'My finger is bleeding./! (I have just found out.)'

When the predicate is non-verbal (nominal, adjectival or existential), the inference of a SIMULTANEOUS SoA is signaled by *-Ø-(y)mIş*. For instance, (8.167) can be uttered by someone who has just seen Mehmet himself (direct evidence) or Mehmet's shoes in the hall (indirect evidence). A speaker who had no special expectations (or had contrary expectations) about the taste of the soup that she is having can utter (8.168) upon tasting it:

(8.167) Mehmet de bura-da-**Ø-ymış**./!
Mehmet CONJ here-LOC-**Ø-(y)mIş**
'Mehmet is also here./! (I have just found out.)'

(8.168) Çorba güzel-**Ø-miş**./!
soup nice-**Ø-(y)mIş**
'The soup is delicious./! (I've just found out.)'

In certain contexts, *-Iyor-(y)mIş* can also express a semantic combination of INFERRED with RECURRENT. For instance, someone who has recently found out that Ahmet meets a friend of his in Ankara quite often can utter (8.169). One can even find *-Iyor-(y)mIş* or *-Ø-(y)mIş* in conveying an inference about a temporally unrestricted (ATEMPORAL) SoA. For instance, a scientist who, contrary to his expectations, has discovered that lizards see in the dark, can utter (8.170). Or a speaker who has recently come to know Mehmet Bey can utter (8.171):

(8.169) Demek ki Ahmet sık sık Ankara-'ya gid-**iyor-muş**.
thus Ahmet often Ankara-DAT go-**Iyor-mIş**
'Thus (as I realize now), Ahmet is going to Ankara quite often.'

(8.170) Kertenkele-ler karanlık-ta gör-**üyor-muş**.
lizard-PLU darkness-LOC see-**Iyor-(y)mIş**
'Lizards see in the dark. (I have just discovered.) '

(8.171) Mehmet Bey alçakgönüllü bir insan-**Ø-mış**.
Mehmet Bey modest a person-**Ø-(y)mIş**
'Mehmet Bey is a modest person. (I have recently found out.)'

-Iyor and *-Ø* can be used without *-(y)mIş* in very similar contexts, to signal NEW INFORMATION (see examples (8.84-8.87) in section 8.2.2.1 above). What *-(y)mIş* additionally does is to emphasize that a change occurred in the speaker's current knowledge state, a characteristic property of the anchoring category INFERRED (see section 5.2.4).

The above exemplified utterances with *-Iyor-(y)mIş* or *-Ø-(y)mIş* are all simple assertions rather than statements with formal-authoritative illocutionary force. Hence, they all entail the anchoring category ASSERTED in the volitional domain. As such, they can be coupled by the following generalized semantic values:

(8.172) ASSERTED(INFERRED(SIMULTANEOUS(SoA))) (*-Iyor-(y)mIş/-Ø-(y)mIş*)

(8.173) ASSERTED(INFERRED(RECURRENT(SoA))) (*-Iyor-(y)mIş*)

(8.174) ASSERTED(INFERRED(ATEMPORAL(SoA))) (*-Iyor-(y)mIş/-Ø-(y)mIş*)

Just as in its 'hearsay' use (mentioned in section 8.2.3.3 in connection with *-Xr*), *-(y)mIş* can anaphorically refer to temporal frame displaced to past in addition to signaling INFERRED. For instance, (8.175) can be uttered by a police inspector upon evaluating evidence gathered from a murder site, and (8.176) by someone who has examined meeting records of a company. The utterance in (8.177), which involves RECURRENT rather than SIMULTANEOUS, can be uttered in a context similar to (8.169) above, with the difference that the speaker infers that Ahmet's multiple visits to Ankara took place in some period in the past:

(8.175) Öl-dür-ül-düğ-ü-nde telefon-la konuş-**uyor-muş**.
die-CAUS-PASS-FN-POSS-LOC phone-COM speak-**Iyor-(y)mIş**
'(It turns out that) He was on the phone when he was murdered.'

(8.176) O toplantı-da Mehmet de var-**Ø-ymış**.
that meeting-LOC Mehmet CONJ EXCP-**Ø-(y)mIş**
'(As I gather now), Mehmet too attended that meeting.'

(8.177) Demek ki Ahmet o zaman-lar sık sık Ankara-'ya gid-**iyor-muş**.
thus Ahmet that time-PLU often Ankara-DAT go-**Iyor-(y)mIş**
'Thus (as I realize now), Ahmet went to Ankara quite often then.'

The generalized semantic values associated with the uses of *-Iyor-(y)mIş* and *-Ø-(y)mIş* exemplified above are as follows:

(8.178) ASSERTED(INFERRED(ANTERIOR$_{ANA}$(SIMULTANEOUS(SoA)))) (*-Iyor-(y)mIş/-Ø-(y)mIş*)

(8.179) ASSERTED(INFERRED(ANTERIOR$_{ANA}$(RECURRENT(SoA)))) (*-Iyor-(y)mIş*)

-(y)mIş can report an utterance from another illocutionary source when combined with *-Iyor* or *-Ø* too, as illustrated by the hearsay utterances below. *-Iyor* and *-Ø* signal SIMULTANEOUS in (8.180) and (8.181), PERFECT/persisting/ in (8.182) and (8.183), and a combination of POSTERIOR and NEW INFORMATION in (8.184) and (8.185) (see 'scheduled future' in section 8.2.2.5). *-Iyor* expresses RECURRENT in (8.186):

(8.180) Ahmet şimdi uyu-**yor-muş**.
Ahmet now sleep-**Iyor-(y)mIş**
'Reportedly, Ahmet is sleeping now.'

(8.181) Hatice ev-de değil-**Ø-miş**.
Hatice house-LOC NEGP-**Ø-(y)mIş**
'Reportedly, Hatice is not at home.'

(8.182) Ali üç gün-dür san-a ulaş-ma-ya çalış-**ıyor-muş**.
Ali three day-SINCE P2SG-DAT reach-AN-DAT try-**Iyor-(y)mIş**
'Reportedly, Ali has been trying to reach you for three days.'

(8.183) Adam üç yıl-dır iş-siz-**Ø-miş**.
man three year-SINCE job-PRIV-**Ø-(y)mIş**
'Reportedly, the man has been unemployed for three years.'

(8.184) Ahmet Cuma gün-ü gel-**iyor-muş**.
Ahmet Friday day-POSS come-**Iyor-(y)mIş**
'Reportedly, Ahmet is coming on Friday.'

(8.185) Akşam televizyon-da güzel bir film var-**Ø-mış**.
evening television-LOC nice a movie EXCP-**Ø-(y)mIş**
'Reportedly, there is a good movie on the TV this evening.'

(8.186) Can sabah-lar-ı koş-**uyor-muş**.
Can morning-PLU-ACC run-**Iyor-(y)mIş**
'Reportedly, Can is jogging every morning.'

Below are the generalized semantic values of the above illustrated uses of *-Iyor-(y)mIş* and *-Ø-(y)mIş:*

(8.187) $\text{hearsay}_{\text{ANA}}$(ASSERTED(CERTAIN(SIMULTANEOUS(SoA)))) (*-Iyor-(y)mIş/-Ø-(y)mIş*)

(8.188) $\text{hearsay}_{\text{ANA}}$(ASSERTED(CERTAIN(RECURRENT(SoA)))) (*-Iyor-(y)mIş*)

(8.189) $\text{hearsay}_{\text{ANA}}$(ASSERTED(CERTAIN(PERFECT/persisting/(SoA)))) (*-Iyor-(y)mIş/-Ø-(y)mIş*)

(8.190) $\text{hearsay}_{\text{ANA}}$(ASSERTED(NEW INFORMATION(POSTERIOR(SoA)))) (*-Iyor-(y)mIş/-Ø-(y)mIş*)

Such reportative uses of *-(y)mIş* can additionally signal relativity to a temporal center displaced to past (a combination of $\text{ANTERIOR}_{\text{ANA}}$ and $\text{hearsay}_{\text{ANA}}$), as in the examples below. *-Iyor* and *-Ø* signal SIMULTANEOUS in (8.191) and (8.192), and PERFECT/persisting/ in (8.193) and (8.194). In (8.195), *-Iyor* signals RECURRENT.

(8.191) Ahmet ara-dığ-ı-nda Cem uyu-**yor-muş**.
Ahmet call-FN-POSS-LOC Cem sleep-**Iyor-(y)mIş**
'Reportedly, Cem was sleeping when Ahmet called him.'

(8.192) Mehmet dün saat iki-de büro-da-**Ø-ymış**.
Mehmet yesterday hour two-LOC office-LOC-**Ø-(y)mIş**
'Reportedly, Mehmet was in the office yesterday at two.'

(8.193) Can ara-dığ-ı-nda Ahmet üç saat-tir bekl-**iyor-muş**.
Can call-FN-POSS-LOC Ahmet three hour-SINCE wait-**Iyor-(y)mIş**
'Reportedly, when Can called him, Ahmet had been waiting for three hours.'

(8.194) Teklif gel-diğ-i-nde adam altı ay-dır iş-siz-**Ø-miş**.
offer come-FN-POSS-LOC man six month-SINCE job-PRIV-**Ø-(y)mIş**
'Reportedly, the man had been unemployed for six months when the offer was made.'

(8.195) Ahmet o zaman-lar sık sık Ankara-'ya gid-**iyor-muş**.
Ahmet that time-PLU often Ankara-DAT go-**Iyor-(y)mIş**
'Reportedly, Ahmet went to Ankara quite often then.'

(8.196), (8.197) and (8.198) below represent the generalized semantic values associated with the reportative uses of *-Iyor-(y)mIş* and *-Ø-(y)mIş*:

(8.196) $\text{hearsay}_{\text{ANA}}$(ASSERTED(CERTAIN($\text{ANTERIOR}_{\text{ANA}}$(SIMULTANEOUS(SoA))))) (*-Iyor/Ø-(y)mIş*)

(8.197) $\text{hearsay}_{\text{ANA}}$(ASSERTED(CERTAIN($\text{ANTERIOR}_{\text{ANA}}$(RECURRENT(SoA))))) (*-Iyor-(y)mIş*)

(8.198) $\text{hearsay}_{\text{ANA}}$(ASSERTED(CERTAIN($\text{ANTERIOR}_{\text{ANA}}$(PERFECT/persisting/(SoA))))) (*-Iyor/Ø-(y)mIş*)

8.2.4 Uses of *-DIr* in combination with *-mIş*, *-Iyor*, *-mAktA*, *-Ø* or *-(y)AcAG*

This section identifies various uses of the combinations of *-DIr* with the bound markers (*-mIş-DIr*, *-mAktA-DIr*, *-Iyor-DIr*, *-Ø-DIr* and *-(y)AcAG-DIr*).

8.2.4.1 *-mIş-DIr*, *-mAktA-DIr*, *-Ø-DIr*, *-(y)AcAG-DIr*: General validity

Section 8.2.1.1 illustrated the use of *-DIr* with non-verbal predicates for expressing temporal unrestrictedness (ATEMPORAL) along with strong factuality (GENERAL FACT). *-DIr* can exclusively expresses the epistemic category GENERAL FACT when it combines with the bound TAM markers *-mIş*, *-mAktA*, and *-(y)AcAG*.

In the examples below, where *-mIş* signals ANTERIOR and PERFECT/result/ (see section 8.1.2 on *-mIş*), *-DIr* presents the propositional contents as well-established, general truths. *-mIş-DIr* in such utterances express stronger factuality as compared to *-DI* (which expresses ANTERIOR or PERFECT with contingent, personal certainty; see section 8.1.1):

(8.199) Homo habilis 2,5 milyon yıl önce evr-il-**miş-tir**.
Homo habilis 2.5 million year before evolve-PASS-**mIş-DIr**
'Homo habilis evolved 2.5 million years ago.'

(8.200) Gün-ümüz-de lazer teknoloji-si ileri bir düzey-e ulaş-**mış-tır**.
day-POSS.A1PL-LOC laser technology-POSS advanced a level-DAT reach-**mIş-DIr**
'Today laser technology has attained an advanced level.'

-mAKtA was already shown to be capable of expressing SIMULTANEOUS and RECURRENT (see section 8.1.4). Example (8.201) below illustrates *-mAktA-DIr* in signaling the combination of GENERAL FACT with SIMULTANEOUS (with a relatively extended event), and (8.202), with RECURRENT. In (8.203) zero-marking (*-Ø*) appears as the non-verbal counterpart of *-mAktA* (*-Ø* can signal SIMULTANEOUS with non-verbal predicates on its own too, but then it signals CERTAIN rather than GENERAL FACT; see section 8.2.2.1):

(8.201) Ekolojik denge hızla bozul-**makta-dır**.
Ecological balance rapidly deteriorate-**mAktA-DIr**
'The ecological balance is being destroyed rapidly.'

(8.202) Bölge-de çok sık deprem etkinliğ-i kayded-il-**mekte-dir**.
region-LOC very frequent earthquake activity-POSS record-PASS-**mAktA-DIr**
'Very frequent earthquake activities are being recorded in the region.'

(8.203) Nöroloji bilim-i henüz emekle-me çağ-ı-nda-**Ø-dır**.
Neurology science-POSS still toddle-FN age-POSS-LOC-**Ø-DIr**
'Neuroscience is yet in the toddling phase.'

-(y)AcAG is the most typical marker of future time reference (POSTERIOR as well as PROSPECTIVE) in Turkish (see section 8.1.3). In the scientific forecast below, *-(y)AcAG-DIr* expresses a combination of POSTERIOR with GENERAL FACT:

(8.204) Petrol rezerv-ler-i azal-dığ-ı-nda bir enerji kriz-i yaşa-n-**acak-tır**.
oil reserve-PLU-POSS diminish-FN-POSS-LOC a energy crisis-POSS live-PASS-**(y)AcAG-DIr**
'An energy crisis will arise when oil reserves diminish.'

Although such uses of *-DIr* for general validity (or, strong factuality) are common in the scientific register, they can be found in other types of communicative contexts too, when the speaker wants to present her statement as a matter of objective truth. For instance, in the example below, the speaker endows her personal experience stronger factuality by using *-mIş-DIr* rather than *-DI*:

(8.205) Mustafa'-yı hiç kır-ma-**mış**-ım-**dır**.
Mustafa-ACC never upset-NEG-**mIş**-A1SG-**DIr**
'I have never upset Mustafa.'

The above illustrated uses of *-mIş-DIr*, *-mAktA-DIr*, *-Ø-DIr* and *-(y)AcAG-DIr* can be coupled with the following generalized semantic values:

(8.206) ASSERTED(GENERAL FACT(ANTERIOR(SoA))) (*-mIş-DIr*)

(8.207) ASSERTED(GENERAL FACT(PERFECT(SoA))) (*-mIş-DIr*)

(8.208) ASSERTED(GENERAL FACT(SIMULTANEOUS(SoA))) (*-mAktA-DIr/ -Ø-DIr*)

(8.209) ASSERTED(GENERAL FACT(RECURRENT(SoA))) (*-mAktA-DIr*)

(8.210) ASSERTED(GENERAL FACT(POSTERIOR(SoA))) (*-(y)AcAG-DIr*)

8.2.4.2 *-mIş-DIr*, *-mAktA-DIr*, *-Ø-DIr*, *-(y)AcAG-DIr*: Strengthened illocutionary force

-DIr can yield a strong, impersonal illocutionary force, in the same morphosyntactic contexts where it conveys GENERAL FACT. For instance, the following examples with *-mIş-DIr* can be found in announcements by a ministry of internal affairs. They respectively signal ANTERIOR and PERFECT in the temporal domain. They both express CERTAIN rather than GENERAL FACT in the epistemic domain, because they convey contingent pieces of information rather than facts with general validity. What *-DIr* grants to such statements is a formal-authoritative (impersonal) illocutionary force, which is linked to the signaling of the volitional category GENERAL STATEMENT (sections 4.1.5, 5.3.7) in the current semantic framework:

(8.211) 13 Haziran 2004 tarih-i-nde konu-yla ilgili soruşturma başlat-ıl-**mış-tır**.
13 June 2004 date-POSS-LOC issue-COM about investigation start-PASS-**mIş-DIr**
'An investigation on this issue was started on 13 June 2004.'

(8.212) Şu an itibar-i-yle bütün suçlu-lar tespit ed-il-**miş-tir**.
this moment regard-POSS-COM all criminal-PLU identify-PASS-**mIş-DIr**
'All of the criminals have been identified by now.'

Below are examples of *-mAktA-DIr* in expressing GENERAL STATEMENT with an ongoing activity (SIMULTANEOUS) (8.213), a regularly repeated event (RECURRENT) (8.214), and an activity which began in the past and still goes on (PERFECT/persisting/) (8.215), respectively. (8.213) can be pronounced by a governmental spokesman, (8.214) can appear in an official report within the context of the ministry of health, and (8.215) can be part of a press notice of a company:

(8.213) Bakan-lar kurul-u taslak üzer-i-nde çalış-**makta-dır**.
minister-PLU council-POSS draft top-POSS-LOC work-**mAktA-DIr**
'The council of ministers is working on the draft.'

(8.214) Bakanlık tesis-ler-i düzenli olarak denetle-**mekte-dir**.
ministry establishment-PLU-ACC regular as inspect-**mAktA-DIr**
'The ministry is regularly inspecting the establishments.'

(8.215) Şirket 15 yıl-dır bilişim sektör-ü-nde faaliyet göster-**mekte-dir**.
company 15 year-SINCE informatics sector-POSS-LOC function-**mAktA-DIr**
'The company has been active in the informatics sector for 15 years.'

In formal-official statements which express SIMULTANEOUS or PERFECT/persisting/, zero-marking (*-Ø*) will appear rather than *-mAktA* when the predicate is non-verbal. For instance, the statement in (8.216) can appear on a sign post near a construction area, and (8.217), in a certificate of good service:

(8.216) İnşaat alan-ı-na gir-mek yasak-**Ø-tır**.
construction area-POSS-DAT enter-INF forbidden-**Ø-DIr**
'It is forbidden to enter the construction area.'

(8.217) Ali Özer 11 Nisan 1998 tarih-i-nden beri kurum-umuz personel-i-**Ø-dir**.
Ali Özer 11 April 1998 date-POSS-ABL since institution-POSS.A1PL staff-POSS-**Ø-DIr**
'Ali Özer has been employed in our institution since 11 April 1998.'

-(y)AcAG-DIr can be used to express GENERAL STATEMENT in future-pointing utterances. For instance, (8.218) can appear in an announcement by an official committee, and (8.219) can appear in a notification issued by a branch bank office:

(8.218) Toplantı sonra-sı-nda ayrıntılı açıklama yap-ıl-**acak-tır**.
meeting later-POSS-LOC detailed statement do-PASS-**(y)AcAG-DIr**
'A detailed statement will be issued after the meeting.'

(8.219) Şube-miz bayram tatil-i boyunca açık ol-**acak-tır**
branch-POSS.A1PL bairam holiday-POSS during open be-**(y)AcAG-DIr**
'Our branch office will be open during the bairam holiday.'

The use of *-DIr* for strengthened illocutionary force is typical of official, administrative and political registers. It is hence mostly found in written language, e.g., in regulations, administrative bulletins, legislative and juridical documents, etc. It also appears in the spoken announcements, e.g., by representatives or spokesmen of official institutions. In non-official communicative settings too, speakers can exploit the strong illocutionary force associated *-DIr* in order to enhance the credibility of their statements. For instance, a medical doctor and a police chief who want to reassure their addressee(s) about their convictions can utter (8.220) and (8.221), respectively. (The temporal relation in these examples matches the definition of PROSPECTIVE rather than POSTERIOR):

(8.220) Merak et-me-yin; kız-ı-nız iyileş-**ecek-tir**.
worry-NEG-IMP.A2PL daughter-POSS-A2PL get.well-**(y)AcAG-DIr**
'Don't worry; your daughter will get well.'

(8.221) Suçlu mutlaka yakala-n-**acak-tır**.
criminal absolutely capture-PASS-**(y)AcAG-DIr**
'The criminal is bound to be captured.'

On the basis of the analyses above, uses of *-mIş-DIr, -mAktA-DIr*, *-Ø-DIr* and *-(y)AcAG-DIr* in statements with strong illocutionary force can be coupled with the following generalized semantic values:

(8.222) GENERAL STATEMENT(CERTAIN(ANTERIOR(SoA))) (*mIş-DIr*)

(8.223) GENERAL STATEMENT(CERTAIN(PERFECT(SoA))) (*mIş-DIr*)

(8.224) GENERAL STATEMENT(CERTAIN(SIMULTANEOUS(SoA))) (*-mAktA-DIr/-Ø-DIr*)

(8.225) GENERAL STATEMENT(CERTAIN(RECURRENT(SoA))) (*-mAktA-DIr*)

(8.226) GENERAL STATEMENT(CERTAIN(PERFECT/persisting/(SoA))) (*-mAktA-DIr)/-Ø-DIr*)

(8.227) GENERAL STATEMENT(CERTAIN(POSTERIOR(SoA))) (*-(y)AcAG-DIr*)

(8.228) GENERAL STATEMENT(CERTAIN(PROSPECTIVE(SoA))) (*-(y)AcAG-DIr*)

8.2.4.3 *-mIş-DIr, -Iyor-DIr, -Ø-DIr, -(y)AcAG-DIr*: Epistemic modality

-DIr can also express epistemic modality (PROBABLE) when it combines with the bound markers *-mIş*, *-Iyor* and *-(y)AcAG*. The following utterances exemplify such uses of *-mIş-DIr,* where *-mIş* conveys the temporal categories ANTERIOR (8.229) and PERFECT/result/ (8.230), respectively:

(8.229) Oya bugün iş-ten erken çık-**mış-tır**.
Ahmet today job-ABL early leave-**mIş-DIr**
'Oya must have left / has probably left the office early today.'

(8.230) Konuk-lar gel-**miş-tir**.
visitor-PLU come-**mIş-DIr**
'The visitors should have come.'

Similarly, *-Iyor-DIr* can express a guess about a presently ongoing (SIMULTANEOUS) event or state (8.231), or one about repeated occurrences in the vicinity of the temporal center (RECURRENT) (8.232):

(8.231) Neşe şimdi kitap ok-uyor-**dur**.
Neşe now book read-**Iyor-DIr**.
'Neşe must be reading / is probably reading now.'

(8.232) Ali şu sıra-lar sık sık İstanbul-'a gid-**iyor-dur**.
Ali this range-PLU often Istanbul-DAT go-**Iyor-DIr**
'Ali is probably / must be going to Istanbul quite often these days'.

Here too, the combination of SIMULTANEOUS with PROBABLE is rendered by *-Ø-DIr* in place of *-Iyor-DIr* when the predicate is non-verbal:

(8.233) Ahmet şimdi çok yorgun-**Ø-dur**.
Ahmet now very tired-**Ø-DIr**
'Ahmet must be / is probably very tired now.'

Although not too often, *-Iyor-DIr* (or *-Ø-DIr*) can also appear in guesses about temporally unrestricted (ATEMPORAL) SoAs:

(8.234) Kertenkele-ler belki de karanlık-ta gör-**üyor-dur**.
lizard-PLU maybe CONJ darkness-LOC see-**Iyor-DIr**
'Maybe lizards see in the dark.'

(8.235) Armadillo herhalde soğukkanlı bir hayvan-**Ø-dır**.
Armadillo probably cold-blooded a animal-**Ø-DIr**
'Armadillo is probably a cold-blooded animal.'

As shown in section 8.2.1.3 above, predictions about future occurrences (which express the combination of POSTERIOR with PROBABLE) are normally rendered by *-Xr*. *-(y)AcAG-DIr* is also acceptable in this use, as seen in (8.236) below. But *-(y)AcAG-DIr* is better suited for guesses about what one intends to do (8.237), an element which lacks in predictions with *-Xr*. In other words, estimations with *-(y)AcAG-DIr* generally involve PROSPECTIVE (which indexes a present cause for a future occurrence, see sections 4.1.6, 5.1.5) rather then POSTERIOR:

(8.236) Ali bu akşam gel-**ecek-tir**.
Ali this evening come-**(y)AcAG-DIr**
'Ali will (probably) come tomorrow evening.'

(8.237) Belki de yeni bir iş kur-**acak-tır**.
maybe CONJ new a business establish-**(y)AcAG-DIr**
'Maybe (s)he intends to / is going to establish a new business.'

The behavior of *-DIr* in its use for PROBABLE is very similar to that of *-Xr* in expressing predictions: It denotes a relatively high degree of likelihood when used without epistemic adverbs (as seen in the examples above), but can be coupled with epistemic adverbs which specify different degrees of likelihood. Below are examples with *-(y)mIş-DIr* and *-Iyor-DIr*:

(8.238) Ali bir ihtimal-le / belki / herhalde saat beş-te gel-**miş-tir**.
Ali one probability-COM maybe probably hour five-LOC come-**mIş-DIr**
'Ali might / may / must have come at five.'

(8.239) Ali bir ihtimal-le / belki / herhalde biz-i bekl-**iyor-dur**.
Ali one probability-COM maybe probably P1PL-ACC wait-**Iyor-DIr**
'Ali might / may / must be waiting for us.'

Again like *-Xr*, *-DIr* in this epistemic function typically appears in conditional apodoses. Below are examples which involve combinations of *-DIr* with *-mIş*, *-(y)AcAG*, *-Iyor*, and *-Ø*:

(8.240) Kar yağ-dı-ysa maç iptal ed-il-**miş-tir**.
snow fall-PAST-CONDe match cancel-PASS-**mIş-DIr**
'If it snowed the match was (probably) cancelled.'

(8.241) Ahmet hazırlık yap-ıyor-sa parti-ye gel-**ecek-tir**.
Ahmet preparation do-CONT-CONDe party-DAT come-**(y)AcAG-DIr**
'If Ahmet is preparing, he is going to come to the party.'

(8.242) Can akşam yol-a çık-acak-sa şimdi alışveriş yap-**ıyor-dur**.
Can evening road-DAT leave-FUT-CONDe now shop-**Iyor-DIr**
'If Can is to leave in the evening, he will be shopping now.'

(8.243) Saat beş-te yol-a çık-mış-sa şimdi Bolu'-da-**Ø-dır**.
hour five-LOC road-DAT leave-EPAST-CONDe now Bolu-LOC-**Ø-DIr**
'If (s)he left at five, she will be in Bolu now.'

Like the predictive use of *-Xr*, the use of *-DIr* for PROBABLE almost exclusively appears in informal communication. It hence renders personal assertions (which signal ASSERTED) rather than general statements with official-authoritative force (which signal GENERAL STATEMENT). Hence, the semantic values associated with the abovementioned uses of *mIş-DIr*, *-Iyor-DIr/-Ø-DIr*, and *-(y)AcAG-DIr* can be generalized as follows:

(8.244) ASSERTED(PROBABLE(ANTERIOR(SoA))) (*mIş-DIr*)

(8.245) ASSERTED(PROBABLE(PERFECT(SoA))) (*mIş-DIr*)

(8.246) ASSERTED(PROBABLE(SIMULTANEOUS(SoA))) (*-Iyor-DIr/-Ø-DIr*)

(8.247) ASSERTED(PROBABLE(RECURRENT(SoA))) (*-Iyor-DIr*)

(8.248) ASSERTED(PROBABLE(ATEMPORAL(SoA))) (*-Iyor-DIr/-Ø-DIr*)

(8.249) ASSERTED(PROBABLE(POSTERIOR(SoA))) (*-(y)AcAG-DIr*)

(8.250) ASSERTED(PROBABLE(PROSPECTIVE(SoA))) (*-(y)AcAG-DIr*)

8.2.5 Stative dimensions expressed by *-Xr*

-Xr can contribute to the expressions of state of possibility and state of willingness (see section 2.7) As stated in section 2.7, these semantic dimensions do not qualify as anchoring relations, because they make part of the inherent semantic structures of designated SoAs. Therefore, such uses of *-Xr* have not been included in the main analysis above.

Expressions of state of possibility by *-Xr* are illustrated below. (8.251) and (8.252) convey 'ability' (or, capacity'). In (8.253) and (8.254), *-Xr* expresses a potentiality which is not exclusively tied to the SoA participants, but also linked to circumstantial conditions:

(8.251) Hatice gitar çal-**ar**.
Hatice guitar play-**Xr**
'Hatice plays/can play guitar.'

(8.252) Bu cihaz üç saat ses kayd-ı yap-**ar**.
This device three hour voice record-POSS do-**Xr**
'This device records/can record voice for three hours.'

(8.253) Bu ofis-te zevk-le çalış-ıl-**ır**.
this office-LOC pleasure-COM work-PASS-**Xr**
'It can be fun to work in this office.'

(8.254) Bura-da sigara iç-il-**ir**.
here-LOC smoke-PASS-**Xr**
'One is allowed to smoke here.'

A state of possibility is also (and more typically) expressed by the Abilitative marker *-Abil,* as illustrated below. Compared to *-Xr* alone, *-Abil-Xr* puts a stronger emphasis on the potential inherent in the designated situation (ability, capacity, disposition, or permission):

(8.255) Hatice gitar çal-**abil-ir**.
Hatice guitar play-**Abil-Xr**
'Hatice can play guitar.'

(8.256) Bu cihaz üç saat ses kayd-ı yap-**abil-ir**.
This device three hour voice record-POSS make-**Abil-Xr**
'This device can record voice for three hours.'

(8.257) Bura-da sigara iç-il-**ebil-ir**.
here-LOC smoke-PASS-**Abil-Xr**
'One is allowed to smoke here.

-Xr can also express a state of willingness associated with an intentional agent, as illustrated in (8.258) and (8.259) below. Unlike the deictic volitional components which can be conveyed by *-Xr* (see section 8.2.1.4 above), these volitional dimensions are part of the designated SoAs (i.e., they are 'participant-oriented' rather than 'speaker-oriented'):

(8.258) Ahmet bu konu-da siz-e yardım ed-**er**.
Ahmet this issue-LOC you-DAT help-**Xr**
'Ahmet will help you on that issue.'

(8.259) Bu adam çocuk-lar-ı için can-ı-nı ver-**ir**.
this man child-PLU-ACC for life-POSS-ACC give-**Xr**
'This man will die for his children.'

In addition to state of possibility or state of willingness, such utterances can be further analyzed for the anchoring relations they signal. For instance, (8.258) expresses a prediction, hence signals a combination of POSTERIOR and PROBABLE (see section 8.2.1.3). (8.259) is a characterizing utterance which expresses a combination of ATEMPORAL and GENERAL FACT (see section 8.2.1.1).

8.3 Anchoring categories characteristically associated with *-Xr*, *-DIr*, *-Iyor* and *-Ø*

Tables 6 and 7 below summarize the generalized semantic values for the main uses of *-Xr*, *-DIr*, *-Iyor* and *-Ø* identified in the analysis above:

Marker(s)	Volitional category	Epistemic category	Temporal category		Ref
-Xr	ASSERTED	(GENERAL FACT	(ATEMPORAL	))	8.46
	ASSERTED	(GENERAL FACT	(PERFECT/persisting/	))	8.51
	ASSERTED	(PROBABLE	(POSTERIOR	))	8.59
	ASSERTED	(PROBABLE	(PROSPECTIVE/imminent/	))	8.60
	WANTED	(HYPOTHETICAL	(POSTERIOR	))	8.69
	WANTED	(HYPOTHETICAL	(PROSPECTIVE	))	8.70
-Xr-(y)DI	ASSERTED	(CERTAIN	(ANTERIOR$_{ANA}$(ATEMPORAL	)))	8.139
	ASSERTED	(¬CERTAIN$_{ANA}$(PROBABLE	(POSTERIOR	)))	8.142
	ASSERTED	(¬CERTAIN$_{ANA}$(PROBABLE	(ANTERIOR$_{ANA}$(POSTERIOR	))))	8.144
-Xr-(y)mIş	hearsay$_{ANA}$(ASSERTED	(GENERAL FACT	(ATEMPORAL	)))	8.150
	hearsay$_{ANA}$(ASSERTED	(PROBABLE	(POSTERIOR	)))	8.151
	hearsay$_{ANA}$(ASSERTED	(CERTAIN	(ANTERIOR$_{ANA}$(ATEMPORAL	))))	8.154
-DIr	ASSERTED	(GENERAL FACT	(ATEMPORAL	))	8.46
	ASSERTED	(GENERAL FACT	(PERFECT/persisting/	))	8.51
-mIş-DIr	ASSERTED	(GENERAL FACT	(ANTERIOR	))	8.206
	ASSERTED	(GENERAL FACT	(PERFECT	))	8.207
	GENERAL STATEMENT	(CERTAIN	(ANTERIOR	))	8.222
	GENERAL STATEMENT	(CERTAIN	(PERFECT	))	8.223
	ASSERTED	(PROBABLE	(ANTERIOR	))	8.244
	ASSERTED	(PROBABLE	(PERFECT	))	8.245
-mAktA-DIr	ASSERTED	(GENERAL FACT	(SIMULTANEOUS	))	8.208
	ASSERTED	(GENERAL FACT	(RECURRENT	))	8.209
	GENERAL STATEMENT	(CERTAIN	(SIMULTANEOUS	))	8.224
	GENERAL STATEMENT	(CERTAIN	(RECURRENT	))	8.225
	GENERAL STATEMENT	(CERTAIN	(PERFECT/persisting/	))	8.226
-Iyor-DIr	ASSERTED	(PROBABLE	(SIMULTANEOUS	))	8.246
	ASSERTED	(PROBABLE	(RECURRENT	))	8.247
	ASSERTED	(PROBABLE	(ATEMPORAL	))	8.248
-(y)AcAG-DIr	ASSERTED	(GENERAL FACT	(POSTERIOR	))	8.210
	GENERAL STATEMENT	(CERTAIN	(POSTERIOR	))	8.227
	GENERAL STATEMENT	(CERTAIN	(PROSPECTIVE	))	8.228
	ASSERTED	(PROBABLE	(POSTERIOR	))	8.249
	ASSERTED	(PROBABLE	(PROSPECTIVE	))	8.250
-Ø-DIr	ASSERTED	(GENERAL FACT	(SIMULTANEOUS	))	8.208
	GENERAL STATEMENT	(CERTAIN	(SIMULTANEOUS	))	8.224
	GENERAL STATEMENT	(CERTAIN	(PERFECT/persisting/	))	8.226
	ASSERTED	(PROBABLE	(SIMULTANEOUS	))	8.246
	ASSERTED	(PROBABLE	(ATEMPORAL	))	8.248

***Table 6**. Semantic values associated with -Xr and -DIr.*

Marker(s)	Volitional category	Epistemic category	Temporal category		Ref
-Iyor	ASSERTED	(CERTAIN	(SIMULTANEOUS	))	8.83
	ASSERTED	(NEW INFORMATION	(SIMULTANEOUS	))	8.88
	ASSERTED	(CERTAIN	(RECURRENT	))	8.92
	ASSERTED	(NEW INFORMATION	(RECURRENT	))	8.94
	ASSERTED	(CERTAIN	(PERFECT/persisting/	))	8.102
	ASSERTED	(NEW INFORMATION	(PERFECT/persisting/	))	8.105
	ASSERTED	(CERTAIN	(ATEMPORAL	))	8.112
	ASSERTED	(NEW INFORMATION	(ATEMPORAL	))	8.117
	ASSERTED	(NEW INFORMATION	(POSTERIOR	))	8.125
	ASSERTED	(NEW INFORMATION	(PROSPECTIVE/imminent/	))	8.126
	IMMEDIATE CONTR.	(NEW INFORMATION	(SIMULTANEOUS	))	8.135
-Iyor-(y)DI	ASSERTED	(CERTAIN	(ANTERIOR$_{ANA}$(SIMULTANEOUS	)))	8.161
	ASSERTED	(CERTAIN	(ANTERIOR$_{ANA}$(RECURRENT	)))	8.164
	ASSERTED	(CERTAIN	(ANTERIOR$_{ANA}$(PERFECT/persisting/	)))	8.162
-Iyor-(y)mIş	ASSERTED	(INFERRED	(SIMULTANEOUS	))	8.172
	ASSERTED	(INFERRED	(RECURRENT	))	8.173
	ASSERTED	(INFERRED	(ATEMPORAL	))	8.174
	ASSERTED	(INFERRED	(ANTERIOR$_{ANA}$(SIMULTANEOUS	)))	8.178
	ASSERTED	(INFERRED	(ANTERIOR$_{ANA}$(RECURRENT	)))	8.179
	hearsay$_{ANA}$(ASSERTED	(CERTAIN	(SIMULTANEOUS	)))	8.187
	hearsay$_{ANA}$(ASSERTED	(CERTAIN	(RECURRENT	)))	8.188
	hearsay$_{ANA}$(ASSERTED	(CERTAIN	(PERFECT/persisting/	)))	8.189
	hearsay$_{ANA}$(ASSERTED	(NEW INFORMATION	(POSTERIOR	)))	8.190
	hearsay$_{ANA}$(ASSERTED	(CERTAIN	(ANTERIOR$_{ANA}$(SIMULTANEOUS	))))	8.196
	hearsay$_{ANA}$(ASSERTED	(CERTAIN	(ANTERIOR$_{ANA}$(RECURRENT	))))	8.197
	hearsay$_{ANA}$(ASSERTED	(CERTAIN	(ANTERIOR$_{ANA}$(PERFECT/persisting/	))))	8.198
-Iyor-DIr	ASSERTED	(PROBABLE	(SIMULTANEOUS	))	8.246
	ASSERTED	(PROBABLE	(RECURRENT	))	8.247
	ASSERTED	(PROBABLE	(ATEMPORAL	))	8.248
-Ø	ASSERTED	(CERTAIN	(SIMULTANEOUS	))	8.83
	ASSERTED	(NEW INFORMATION	(SIMULTANEOUS	))	8.88
	ASSERTED	(CERTAIN	(PERFECT/persisting/	))	8.102
	ASSERTED	(NEW INFORMATION	(PERFECT/persisting/	))	8.105
	ASSERTED	(CERTAIN	(ATEMPORAL	))	8.112
	ASSERTED	(NEW INFORMATION	(ATEMPORAL	))	8.117
	ASSERTED	(NEW INFORMATION	(POSTERIOR	))	8.125

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-Ø-(y)DI	ASSERTED	(CERTAIN	(ANTERIOR$_{ANA}$(ATEMPORAL	)))	8.139
	ASSERTED	(CERTAIN	(ANTERIOR$_{ANA}$(SIMULTANEOUS	)))	8.161
	ASSERTED	(CERTAIN	(ANTERIOR$_{ANA}$(PERFECT/persisting/	)))	8.162
-Ø-(y)mIş	hearsay$_{ANA}$(ASSERTED	(GENERAL FACT	(ATEMPORAL	)))	8.150
	hearsay$_{ANA}$(ASSERTED	(CERTAIN	(ANTERIOR$_{ANA}$(ATEMPORAL	))))	8.154
	ASSERTED	(INFERRED	(SIMULTANEOUS	))	8.172
	ASSERTED	(INFERRED	(ATEMPORAL	))	8.174
	ASSERTED	(INFERRED	(ANTERIOR$_{ANA}$(SIMULTANEOUS	)))	8.178
	hearsay$_{ANA}$(ASSERTED	(CERTAIN	(SIMULTANEOUS	)))	8.187
	hearsay$_{ANA}$(ASSERTED	(CERTAIN	(PERFECT/persisting/	)))	8.189
	hearsay$_{ANA}$(ASSERTED	(NEW INFORMATION	(POSTERIOR	)))	8.190
	hearsay$_{ANA}$(ASSERTED	(CERTAIN	(ANTERIOR$_{ANA}$(SIMULTANEOUS	)))	8.196
	hearsay$_{ANA}$(ASSERTED	(CERTAIN	(ANTERIOR$_{ANA}$(PERFECT/persisting/	))))	8.198
-Ø-DIr	ASSERTED	(GENERAL FACT	(SIMULTANEOUS	))	8.208
	GENERAL STATEMENT	(CERTAIN	(SIMULTANEOUS	))	8.224
	GENERAL STATEMENT	(CERTAIN	(PERFECT/persisting/	))	8.226
	ASSERTED	(PROBABLE	(SIMULTANEOUS	))	8.246
	ASSERTED	(PROBABLE	(ATEMPORAL	))	8.248

Table 7. *Semantic values associated with -Iyor and -Ø.*

On the basis of the summaries given in the tables above and by taking into account the semantic associations of the other TAM markers listed in section 8.1.5 (*-(y)DI*, *-mIş*, *-(y)mIş*, *-mAktA* and *-(y)AcAG*), the semantic behavior of *-Xr*, *-DIr*, *-Iyor* and *-Ø* in the three domains of anchoring can be outlined as follows:

- In the temporal domain, *-Xr* and *-DIr* typically express temporal unrestrictedness (ATEMPORAL). *-Iyor* and *-Ø* are typically used for for continuing events or states (SIMULTANEOUS) and for contingently repeated occurrences (RECURRENT). They can express ATEMPORAL only when the scope-taking epistemic category is CERTAIN or NEW INFORMATION (or when *-Xr* and *-DIr* are blocked due to formal combinatory constraints; see section 8.4.1 below). Both *-Iyor*/*-Ø* and *-Xr* can convey POSTERIOR, with different epistemic values. But none of them is characteristically associated with POSTERIOR, since *-(y)AcAG* is the most typical marker of future time reference. PERFECT/persisting/ is neutralized between *-Iyor/-Ø* and *-Xr*/*-DIr*, hence it is characteristic of neither pair.
- The speaker's choice between *-Xr/-DIr* and *-Iyor/-Ø* has significant epistemic consequences. *-Xr* and *-DIr* express either general validity (GENERAL FACT) or epistemic modality (PROBABLE), but they can neither signal personal certainty (CERTAIN) nor index pieces of immediate evidence (NEW INFORMATION). In contrast, *-Iyor* and *-Ø* express either CERTAIN

or NEW INFORMATION, but they can be used neither for PROBABLE nor GENERAL FACT. *-Iyor* and *-Ø* also appear in utterances which express CERTAIN. But this association is not characteristic of them, since CERTAIN can also be signaled by *-DI, -(y)DI, -mIş, -(y)AcAG,* and *-mAktA*. Therefore, CERTAIN is best taken as formally unmarked.

- In the volitional domain, *-Xr* and *-DIr* are associated with GENERAL STATEMENT, while *-Iyor* can mark IMMEDIATE CONTRIBUTION (*-Xr* expresses IMMEDIATE CONTRIBUTION only in a closed set of formulaic explicit performatives). *-Xr* also appears in expressions which signal WANTED (in requests, offers, and promises), although WANTED is more typically expressed by an Imperative or Optative marker (see section 7.2). Both *-Xr/-DIr* and *-Iyor/-Ø* appear in assertions. But since ASSERTED can also be there with *-DI/-(y)DI, -mIş/-(y)mIş, -(y)AcAG*, and *-mAktA,* it is best taken as formally unmarked.

In summary, *-Xr* and *-DIr* are most characteristically associated with ATEMPORAL, GENERAL FACT, PROBABLE and GENERAL STATEMENT and *-Iyor* and *-Ø,* with SIMULTANEOUS, RECURRENT, NEW INFORMATION and IMMEDIATE CONTRIBUTION. These associations suggest the following cross-domain generalization: *-Xr* and *-DIr* express *categories of generality* (in addition to PROBABLE), while *-Iyor* and *-Ø* express *categories of immediacy* (in addition to RECURRENT). This is depicted in Figure 4 below with two semantic maps drawn on the semantic space of anchoring categories:[113]

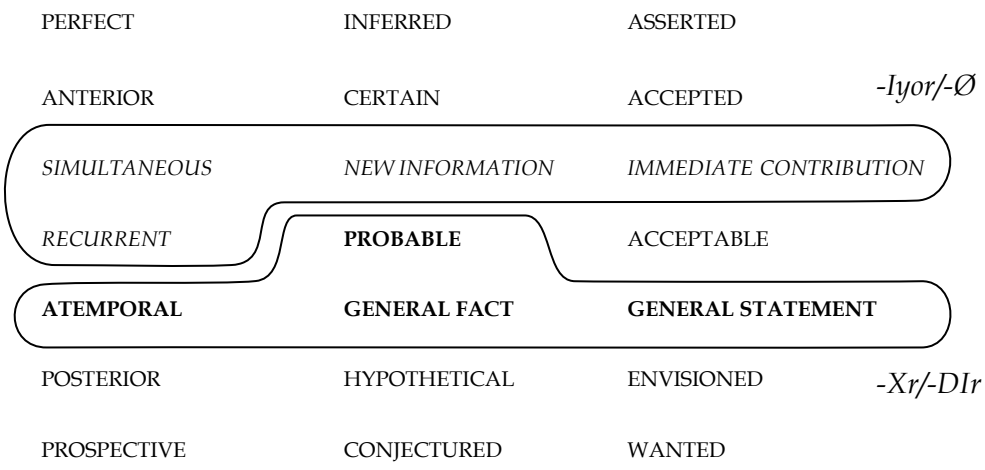

***Figure 4**. Semantic maps for* -Xr, -DIr, -Iyor *and* -Ø.

[113] The semantic maps shown here are somewhat different from the conventional ones used in linguistic typology. In conventional semantic maps, the contents and the structure of the semantic space are inductively discovered using data from more than one language: Two uses are placed on the semantic space if they are expressed by different markers in at least two languages. Uses are then arranged on the space such that each marker is mapped onto a connected (contiguous) area. Since the analyses here involve only one language, this inductive method is not applicable. Instead, the content and the structure of the semantic space are motivated in a language-independent way, in terms of universally applicable cognitive and communicative notions (Part I). One consequence of this difference is the requirement of 'contiguity' (which says that a marker should map onto a connected area on the semantic space) is not directly applicable here, because the labels on the semantic space do not correspond to 'uses' defined at the level of communication but to semantic components (building blocks) of uses.

8.4 Further analyses and comparisons with previous treatments

8.4.1 Notes on semantic restrictions and formal exceptions

Certain combinations of anchoring categories are more felicitous than others. For instance, hearsay can more freely combine with other anchoring categories compared to inference (INFERRED), because the contextual requirements of the former are less strict. INFERRED requires immediate evidence to be manifest at the time of utterance, and this poses restrictions on the temporal and epistemic categories it can combine with. But $\text{hearsay}_{\text{ANA}}$ can take scope over any temporal, epistemic and volitional category, becuase it only transmits what the speaker has heard (or read) from a third party. For example, $\text{hearsay}_{\text{ANA}}$ can combine with PROBABLE (semantic value (8.151)) or NEW INFORMATION (semantic value (8.190)), but INFERRED cannot because it is semantically paradigmatic (hence mutually exclusive) with these epistemic categories.

-Xr and *-DIr* have been shown to express similar semantic ranges, with verbal and non-verbal predicates respectively. The same also holds with *-Iyor* and *-Ø*. But these correspondences have exceptions. For instance, *-Xr* can, but *-DIr* cannot signal POSTERIOR + PROBABLE (predictions) or WANTED (e.g., requests, offers, and promises). Similarly, *-Iyor* can, but *-Ø* cannot, express RECURRENT (contingently repeated occurrences) or IMMEDIATE CONTRIBUTION (e.g., explicit performatives). These restrictions are presumably due to the fact that non-verbal (nominal, adjectival, or existential) predicates generally denote stative SoAs, while predictions, requests, promises and offers normally involve a change-of-state (inchoativity) in the future, and repeated occurrences normally involve telic or punctual SoAs.[114]

Certain semantic values which can obtain with *-Xr*, *-DIr*, *-Iyor* and *-Ø* (or a combination of them) require very specific contexts. For instance, *-Iyor-DIr* can express a guess about how long a certain event or state has been obtaining (a combination of PERFECT/persisting/ and PROBABLE), as in (8.260) below. Or, *-(y)mIş* can be used in reporting a permission granted by a third party, as in

[114] It is possible to express a request concerning a non-verbal state if one is to prescribe an entry into a state. In this case *ol-ur* is used instead of *-DIr* (i). Similarly, if the speaker is to express repeated occurrences of a non-verbal state, she will use *ol-uyor* rather than *-Ø* (i-ii). The auxiliary *ol* can also serve as an inchoativization device in a prediction (iii):

(i) Sessiz **ol-ur** mu-sunuz lütfen?
quite **AUX-Xr** QP-A2PL please
'Would you be quite please?'

(ii) Ali şu sıralar çok sık hasta **ol-uyor**.
Ali this range-PLU very frequent sick **AUX-Iyor**
'Ali gets sick very often nowadays.'

(iii) Saat beş-te ev-de **ol-ur**-sun.
hour five-LOC house-LOC **AUX-Xr**-A2SG
'You will (probably) be at home at five.'

(8.261). Such uses were not included in the main analysis above, because they appear very infrequently:

(8.260) Ali bir hafta-dır san-a ulaş-ma-ya çalış-**ıyor-dur**.
Ali one week-SINCE you-DAT reach-AN-DAT try-**Iyor-DIr**
'Probably, Ali has been trying to reach you for one week.'

(8.261) Gir-ebilir-**miş**-sin.
enter-POS-**mIş**-A2SG
'Reportedly, you can come in/you are allowed to come in.'

As also mentioned in Chapter 7, a formal restriction in the TAM system of modern standard Turkish is that *-DIr* does not combine with *-Xr*, although these markers belong to morphosyntactically compatible formal paradigms (the former is an enclitic and the latter, a bound marker). This restriction is apparently motivated by formal economy gained by cumulative expression (see section 4.4.3): *-Xr* with verbal and *-DIr* with non-verbal predicates are associated with similar combinations of anchoring categories (e.g., ATEMPORAL along with GENERAL FACT and/or GENERAL STATEMENT). Another formal exception is found in the expression of ATEMPORAL in certain morphosyntactic contexts: Although ATEMPORAL is normally expressed by *-DIr* in non-verbal predication (semantic value (8.46)), it is exceptionally marked by *-Ø* when either *-(y)DI* or *-(y)mIş* is there (semantic values (8.139), (8.150) and (8.174)), as shown in the examples (8.262) and (8.263) below. This exception is apparently motivated by a combinatory restriction in the general structuring of the Turkish TAM system: Both **-DIr-(y)DI* and **-DIr-(y)mIş* are morphosyntactically ill-formed, since they attempt to combine two enclitics (see the allowed patterns of combination in section 7.2). Similarly, ATEMPORAL is exceptionally marked by *-Iyor* or *-Ø* when it combines with epistemic modality (PROBABLE) (semantic value (8.248)), as seen in the examples (8.264) and (8.265) below. This exception is also formally motivated; *-Iyor* and *-Ø* appear simply because **-Xr-DIr* and **-DIr-DIr* are both ill-formed:

(8.262) Mustafa çok *zeki-**dir-di** / zeki-**Ø-(y)di**.
Mustafa very clever-**DIr-(y)DI** clever-**Ø-(y)DI**
'Mustafa was very clever.'

(8.263) Bir mayıssineği-nin ömr-ü birkaç *saat-**tir-miş** / saat-**Ø-miş**.
a mayfly-GEN lifetime-POSS a.few hour-**DIr-(y)mIş** hour-**Ø-(y)mIş**
'Reportedly, the lifetime of a mayfly is only a few hours.'

(8.264) Kertenkele-ler belki de karanlık-ta *gör-**ür-dür** / gör-**üyor-dur**.
lizard-PLU maybe darkness-LOC see-**Xr-DIr** see-**Iyor-DIr**
'Maybe lizards see in the dark.'

(8.265) Armadillo herhalde soğukkanlı bir *hayvan-**dır-dır** / hayvan-**Ø-dır**.
Armadillo probably cold-blooded a animal-**DIr-DIr** animal-**Ø-DIr**
'Armadillo is probably a cold-blooded animal.'

8.4.2 Previous semantic labels of *-Iyor*, *-Xr* and *-DIr* in terms of anchoring categories

Most of the previous studies in the semantics of *-Iyor*, *-Xr* and *-DIr* have attempted to describe the semantic functioning of these makers in terms of the traditional categories aspect, tense, mood or modality. The following paragraphs summarize how these aspectual, temporal, and modal characterizations of *-Iyor*, *-Xr*, and *-DIr* are covered within the current semantic framework.

-Iyor has variously been labeled as 'progressive aspect' (Underhill 1976/1987: 111-114; Yavaş 1980: 125-133), 'continuous aspect' (Kornfilt 1997: 357-358), 'present tense' and 'imperfective aspect' (Aksu-Koç 1988: 18, 1994: 332, 1998: 268), or 'focal intraterminal view' (Johanson 1994: 254-255; Csató & Johanson 1998: 214). Such aspectotemporal values were analyzed in the present framework as expressing the temporal anchoring category SIMULTANEOUS. Uses of *-Iyor* which involve repeated occurrences have previously been associated with the 'habitual aspect' (Underhill 1976/1987: 149; Aksu-Koç 1998: 260-261; Haspelmath 1998: 39; Bybee, Perkins & Pagliuca 1994: 141). Such uses were taken here as signaling either RECURRENT or a combination of ATEMPORAL with epistemic contingency (CERTAIN or NEW INFORMATION). Yavaş (1980: 83-92, 1982a, and particularly 1982b) and Johanson (1994: 254-255) identify the use of *-Iyor* for future time reference in contexts where a present plan or schedule exists for the future event. Such uses of *-Iyor* were analyzed here as cumulatively expressing POSTERIOR and NEW INFORMATION. *-Iyor* has also been associated with the 'perfect of persisting situation' (Arslan 2001), which was rendered in the metalanguage of anchoring categories here as PERFECT/persisting/.

-Xr, which has traditionally been labeled as the 'aorist' (or *muzari* in some Turkish sources), has most commonly been seen as a tense or aspect marker. In Turkish grammar books, it appears as the marker of *geniş zaman* 'broad tense'. It has been also identified as 'extended tense' (Reichenbach 1947: 290-291), 'timeless tense' (Menges 1968: 128), 'indefinite present' (Aksu-Koç 1988: 18), 'present tense' and 'habitual aspect' (Underhill 1976/1987: 147-149, Kornfilt 1997: 336, 356), 'generic-habitual aspect' (Aksu-Koç 1995: 276, 1998: 272-273, Yavaş 1980: 96-100, 1982a: 41-44), the marker of 'object-level predication' (Yavaş 1980: 101-104, 1982a: 45-49), 'non-focal intraterminal viewpoint operator' (Johanson 1994: 254-255), and a marker which instantiates the cross-linguistic category type HABG (Dahl 1985: 157). Such uses of *-Xr* were analyzed here as signaling the temporal anchoring category ATEMPORAL (along with the epistemic category GENERAL FACT when the marker is used on its own). Some scholars have described *-Xr* as being more 'modal' than 'temporal'. Modal identifications of *-Xr* include 'ability' in (Lewis 1967/1978: 117; Savaşır 1986) 'readiness' and 'willingness' (Underhill 1976/1987: 148; Yavaş 1980: 105-109), and 'dispositional

statements' (Aksu-Koç 1995: 276). Such uses of *-Xr* were analyzed here as expressing a state of possibility or a state of willingness. The use of *-Xr* for future has often been taken as 'modal' and analyzed as involving 'uncertainty' (Yavaş 1980: 104-105, 110; 1982a: 49-51, 1982b; Johanson 1994: 254-255), 'possibility or necessity' (Aksu-Koç 1995: 276-277) or as instantiating the cross-linguistic category type PRED (Dahl 1985: 157). Such future-oriented uses of *-Xr* were labeled here as 'predictive', and analyzed as cumulatively signaling the temporal category POSTERIOR and the epistemic category PROBABLE. *-Xr* has also been identified in 'requests' (Lewis 1967/1978: 117), in 'polite imperatives', 'offers' and 'invitations' (Underhill 1976/1987: 148, Yavaş 1980: 107-109), and in 'promises' (Lewis 1967/1978: 117, Kornfilt 1997: 340-341). All of these uses were schematically analyzed here as signaling the volitional category WANTED in the volitional domain (along with POSTERIOR and HYPOTHETICAL in the temporal and epistemic domains).

-DIr has mostly been discussed in terms of 'modal' or 'pragmatic' values. These include 'supposition' (Lewis 1967/1978: 140), 'presumptive' ('Präsumtiv') (Johanson 1994: 253), 'nonfactivity' (Sansa 1986), 'uncertainty' (Kerslake 1988: 155-156), 'possibility', 'nonfactivity' and 'supposition' (Aksu-Koç 1995), 'inferred probability' and 'degree of certainty' (Kornfilt 1997: 81, 376), 'judgment' (Ruhi, Zeyrek & Osam 1995; Aksu-Koç 1995). Such uses of *-DIr* were descriptively labeled here as involving 'epistemic modality' and analyzed as signaling the anchoring category PROBABLE. *-DIr* has also been described as conveying 'definiteness' and 'general validity' (Underhill 1976/1987: 33), 'factivity' and 'certainty' (Sansa 1986), 'general truth' (Tosun 1988: 509), 'permanent or long-term validity' (Kerlake 1988: 155), 'factuality' (Aksu-Koç 1995), and 'definitional truths' (Kornfilt 1997: 376-377). Such uses of *-DIr* were linked here to the signaling of the anchoring category GENERAL FACT. Uses of *-DIr* which have been variously identified as 'emphatic certainty' or 'definiteness and authority' in formal and official style (Kornfilt 1997: 81, 376-377), and 'emphasis', 'definiteness' or 'strengthened assertions' in formal or written language (Lewis 1967/1978: 122, 139-140) were identified here as involving an impersonal illocutionary force and analyzed into the semantic category GENERAL STATEMENT. *-DIr* has also been associated with the 'generic aspect' (with non-verbal predicates) in Sansa (1986) and Aksu-Koç (1995: 277). This aspectotemporal value was identified here with the signaling of ATEMPORAL.

The analysis of *-Xr*, *-DIr*, *-Iyor* and *-Ø* presented in this chapter has shown that the traditional categories of tense, aspect, and mood cannot adequately characterize the overall semantic ranges of these markers, since each of them characteristically expresses semantic categories from three different (temporal, epistemic, and volitional) domains. For instance, *-Iyor* was always identified in temporal terms (mostly as a 'progressive/continuous aspect' marker and sometimes as a 'present tense'). But the analysis here has shown that it is also strongly associated with the epistemic category NEW INFORMATION as well as the volitional category IMMEDIATE CONTRIBUTION (in addition to the temporal categories SIMULTANEOUS, RECURRENT and PERFECT/persisting/). Similarly, while

-DIr has mostly been characterized as a mood marker, it has been shown that it characteristically expresses the temporal category ATEMPORAL in addition to the epistemic categories PROBABLE and GENERAL FACT and the volitional category GENERAL FACT.

The following sections voice some generalizations and observations on the basis of the decompositional analysis accomplished so far and compare the results with some previous treatments in the literature on Turkish TAM categories. A general comparison of the semantic framework of anchoring categories with frameworks which depend on the traditional categories of tense, aspect, mood (and their subcategories) will be mentioned in the Conclusions.

8.4.3 The correspondence between *-Xr* and *-DIr* and that between *-Iyor* and *-Ø*

-DIr and *-Ø* in non-verbal predication have been shown to express semantic ranges similar to those expressed by *-Xr* and *-Iyor* in verbal predication. This result endorses Sansa's (1986) original observation as to the correspondence between *-Xr* and *-DIr* on the one hand, and that between *-Iyor* and *-Ø* on the other. But here, this observation was qualified and restricted in a number of ways. First, it was shown that some uses associated with *-Xr* and *-Iyor* in verbal predication have no counterpart with *-DIr* or *-Ø* in non-verbal predication (see section 8.4.1 above). Second, it was shown that *-Ø* can exceptionally appear instead of *-DIr* due to restrictions in morphosyntactic combinability (section 8.4.1). Third, *-Ø* was shown to function as the non-verbal counterpart of *-mAktA* when the enclitic *-DIr* is there (e.g., semantic values (8.208), (8.224), (8.226)). Fourth, while Sansa (1986: 145) tends to assume zero-marking in every occurrence of *-DIr* with non-verbal predicates, it is only posited here when it can be attributed semantic content due to a paradigmatic contrast.[115]

8.4.4 *-Xr* and *-DIr* as epistemic modals

Sections 8.2.1.3 and 8.2.4.3 have shown that the semantic ranges of *-Xr* and *-DIr* include epistemic modality (PROBABLE). Indeed, *-Xr* and *-DIr* can be replaced with *-(y)Abilir* and *ol-abilir*, respectively,

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[115] In the present analysis, *-Ø* is only posited when an anchoring category which would be expressed by *-Iyor* in a verbal sentence (e.g., SIMULTANEOUS or RECURRENT) is signaled in a non-verbal sentence, as in (i). In sentences like (ii), *-Ø* is assumed because it replaces *-DIr* due to morphosyntactic restrictions. However, in sentences like (iii), where ATEMPORAL can be attributed to *-DIr* alone, there will be no paradigmatic motivation for positing zero-marking:

(i) Ahmet şimdi çok yorgun-**Ø**-dur.
Ahmet now very tired-**Ø**-JDGe
'Ahmet must be very tired now.'

(ii) Mustafa çok zeki bir insan-**Ø**-dı.
Mustafa very clever a person-**Ø**-PASTe
'Mustafa was a very clever person.'

(iii) Tavşan-lar otçul-dur.
rabbit-PLU herbivore-JDGe
'Rabbits are herbivores.'

which are the most typical markers of epistemic possibility in Turkish. Examples are given in (8.266-8.268) below. *-Xr* is like *-(y)Abilir* in that it additionally expresses future (POSTERIOR), and *-DIr* is like *ol-abilir* in that it can also combine with bound markers with different temporal values. The pairs only differ in the degree of likelihood they express. As shown in sections 8.2.1.3 and 8.2.4.3, *-Xr* and *-DIr* convey a relatively high degrees of likelihood (i.e., 'epistemic necessity', or PROBABLE/high/) when used without epistemic adverbs. But *-(y)Abilir* and *ol--abilir* always express relatively low degrees of likelihood, (i.e., 'epistemic possibility', or, PROBABLE/low/ or PROBABLE/medium/):

(8.266) Ahmet bu gece gel-**ir** / gel-**ebilir**.
Ahmet this night come-**Xr** come-**(y)Abilir**
'Ahmet will probably / may (might) come tonight.'

(8.267) Neşe şimdi ev-de-**Ø-dir** / ev-de-**Ø** **ol-abilir**.
Neşe now house-LOC-**Ø -DIR** house-LOC-**Ø** **AUX-(y)Abilir**
'Neşe should / may (might) be at home now.'

(8.268) Konuk-lar gel-miş-**tir** / gel-miş **ol-abilir**.
visitor-PLU come-EPAST-**DIr** come-EPAST **AUX-(y)Abilir**
'The visitors will probably / may (might) have arrived.'

The markers *ol-malı* or *ol-acak,* which typically mark epistemic necessity in Turkish, can also be used in place of *-DIr,* to convey very similar (high) degrees of likelihood:

(8.269) Konuklar gel-miş-**tir** / **ol-malı** / **ol-acak**.
vistor-PLU come-EPAST-**DIr** **AUX-mAlI** **AUX-(y)AcAG**
'The visitors should/must/will have arrived.'

(8.270) Neşe şimdi çalış-ıyor-**dur** / **ol-malı** / **ol-acak**.
Neşe now work-CONT-**DIr** **AUX-mAlI** **AUX-(y)AcAG**
'Neşe should/must/will be working now.'

Ruhi, Zeyrek & Osam (1995: 108) and Aksu-Koç (1995: 282-285) identify *-Xr* and *-DIr* as 'judgment markers', on the basis of the distinction proposed in Palmer (1986: 57-76) between 'judgments' and 'evidentials'. The present analysis supports this identification by making it clear that *-Xr* and *-DIr* are used in non-evidential contexts to express less-than-certain judgments of the speaker[116] (see also the discussion in 8.4.6).

[116] To say that *-Xr* and *-DIr* are 'non-evidential' is not to say that utterances in which they appear are not based on any kind of evidence. For instance, the prediction in (i) can be based on the speaker's observations on prevailing weather conditions. Similarly, the judgment in (ii) can be arrived at using various pieces of information such as knowledge about Ahmet's time of departure, the distance he was supposed to make, traffic conditions, etc. Such utterances with *-Xr* and *-DIr* are analyzed as 'non-evidential' because they *do not specifically index* pieces of immediate evidence:

The component of epistemic modality associated with *-Xr* and *-DIr* has sometimes been coupled with the idea of an 'epistemic scale'. For instance, Sansa (1986: 145) states that *-DIr* "behaves like an 'everywhere' or 'anywhere' operator on the modality scale, shifting between CERTAIN and NONCERTAIN, where CERTAIN marks factive and NONCERTAIN nonfactive components of modality". Similarly, Aksu-Koç (1995) associates *-Xr* and *-DIr* with a 'scale of certainty', locating their 'factive' uses at the top edge of the scale. One apparent shortage of these characterizations is that they fail to distinguish the sense of general validity or strong factuality (GENERAL FACT) (which is characteristically expressed by *-Xr* and *-DIr*) from that of contingent certainty based on personal knowledge (CERTAIN) (which obtains with markers other than *-Xr* or *-DIr*, e.g., with *-Iyor, -DI* and *-(y)AcAG*).

8.4.5 Epistemic generality by *-Xr*/*-DIr* vs. epistemic contingency by *-Iyor*/*-Ø*

One generalization which comes out of the analysis in this chapter is that while *-Xr* and *-DIr* are associated with epistemic generality (GENERAL FACT), *-Iyor* and *-Ø* are associated with epistemic contingency (CERTAIN and NEW INFORMATION). This contrast, which has already been illustrated with utterance pairs in which both *-Xr* and *-Iyor* convey PERFECT/persisting/ or ATEMPORAL (sections 8.2.2.3 and 8.2.2.4), is emphasized in the examples below. In (8.271), the speaker expresses her love for cats as a general, stable fact, hence it uses *-Xr*. But in (8.272), the expression *duyduğuma göre* 'as I've heard' signals weaker factuality and the sentence accordingly uses *-Iyor*. Similarly, in (8.273), *bilmeyen yoktur* 'everyone knows' indicates established, general validity, hence the situation is expressed by *-Xr* rather than *-Iyor*. But in (8.274), *çok garip* 'very strange' indicates a non-established, contingent piece of information; hence *-Iyor* is better suited than *-Xr*:

(8.271) Ben kedi-ler-i çok sev-**er**-im.
I cat-PLU-ACC much like-**Xr**-A1SG.
'I like cats very much.'

(8.272) Duy-duğ-um-a göre Mustafa kedi-ler-i çok sev-**iyor**.
hear-FN-POSS.A1SG-DAT according Mustafa cat-PLU-ACC much like-**Iyor**
'As I've heard, Mustafa likes cats very much.'

(8.273) Bil-me-yen yok-tur, yıl-lar-dır rakı iç-**er**-im / ?iç-**iyor**-um.
know-NEG-SREL NEG.EXCP-JDGe year-PLU-SINCE raki dirnk-**Xr**-A1SG drink-**Iyor**-A1SG
'Everyone knows; I have been drinking raki for years.'

(i) Bu yıl mahsül bol ol-**ur**.
this year crop abundant be-Xr
'The crop will (probably) be abundant this year.'

(ii) Ahmet gel-miş-**tir**.
Ahmet come-EPAST-DIr
'Ahmet must/should have come.'

(8.274) Çok garip, yıl-lar-dır kar yağ-m-**ıyor** / ?kar yağ-ma-**z**.
very strange year-PLU-SINCE snow-NEG-**Iyor** snow-**NEG.Xr**
'It's very strange; it has not snowed for years.'

A conditional protasis typically indicates a contingent relation to the immediate knowledge state, rather than a fact with general validity. Therefore, in (8.275) and (8.276) below, *-Iyor* and *-Ø* appear instead of *-Xr* or *-DIr* in the protases, even though the conditions concern temporally unrestricted (ATEMPORAL) SoAs. Similarly, although normally *-Xr* and *-DIr* appear in proverbs (see section 8.2.1.1), a speaker can emphasize the immediate epistemic relevance of her message by using *-Iyor* or *-Ø* (8.277 and 8.278):

(8.275) Yüz-me-yi bil-m-**iyor**-sa-nız / #bil-**mez**-se-niz bura-da kal-ın.
swim-INF-ACC know-NEG-**Iyor**-CONDe-A2PL know-**NEG.Xr**-CONDe-A2PL here-LOC stay-IMP.A2PL
'If you can't swim, stay here.'

(8.276) Ahmet ciddi bir insan-**Ø**-sa / *insan-**dır**-sa gel-ir.
Ahmet serious a person-**Ø**-CONDe person-**DIr**-CONDe come-HABG
'If Ahmet is a serious person, he will come.'

(8.277) Her koyun kendi bacağ-ı-ndan as-ıl-**ır** / as-ıl-**ıyor**.
each sheep self leg-POSS-ABL hang-PASS-**Xr** hang-PASS-**Iyor**
'Every man for himself.' (Lit: 'Each sheep is hung on its own leg.')

(8.278) Aşk-ın göz-ü kör-**dür** / kör-**Ø**.
love-GEN eye-POSS blind-**DIr** blind-**Ø**
'Love is blind.'

The 'epistemic generality vs. epistemic contingency' contrast between *-Xr/-DIr* vs. *-Iyor/-Ø* was pointed out only on a few occasions in the previous literature, and it has never been identified as explicitly as here. The following comment Lewis (1967/1978: 117) draws attention to the sense of 'immediacy' associated with *-Iyor:* "For 'I love you', the Turk says *seni seviyorum*; if he said *seni severim* that would sound far too vague and without immediacy, corresponding rather to 'I like you' ". Kerslake (1988) points to a similar contrast in her example replicated in (8.279) below. *-DIr* "implies that the speaker knows about the scent of this species of flower from previous experience, or as an item of common knowledge, and that he is making a generic statement on that basis", and zero-marking will be chosen "for conveying that the speaker is receiving the scent of the flower in front of him as he speaks" (Kerslake 1988: 156-157):

(8.279) Bu çiçeğ-in koku-su güzel-**dir** / güzel-**Ø**.
this flower-GEN scent-POSS nice-**DIr** nice-**Ø**
'This flower has a lovely scent.'
(Kerslake 1988: 156)

8.4.6 *-Iyor* and *-Ø* as evidentials

In the previous literature, evidentiality has only been associated with *-mIş/-(y)mIş* in Turkish (e.g., Lewis 1967: 101, 122; Yavaş 1980: 41-50, 55-65; Slobin & Aksu 1982; Aksu-Koç 1986, 1988, 1995, 1998; Meydan 1996, Taylan 2000; Johanson 2000b, 2003). The analysis presented here has shown that *-Iyor* and *-Ø* also have evidential uses, in utterances which signal a newly emerged piece of evidence which is not (yet) well-integrated to the current knowledge state (i.e., NEW INFORMATION). While the inferential uses of *-mIş* and *-(y)mIş* (those which express INFERRED) indicate a process of reasoning which leads to a conclusion, the evidential uses of *-Iyor* and *-Ø* index the immediate piece of evidence itself, with or without a component of surprise or 'miravity'.

The examples below show that while *-Iyor* and *-Ø* can indicate surprise, *-Xr* and *-DIr* cannot, due to the non-evidential nature of the latter pair:

(8.280) Aa! / vay be! / yaşasın!
oh wow yipee

(a) … Ahmet gel-**iyor**! / #gel-iyor-**dur**! / #gel-**ir**!
Ahmet come-**Iyor** come-Iyor-**DIr** come-**Xr**
'Ahmet is coming!' / 'Ahmet must be coming!' / 'Ahmet will come!'

(b) … Ahmet bura-da-**Ø**! / #bura-da-Ø-**dır**!
Ahmet here-LOC-**Ø** here-LOC-Ø-**DIr**
'Ahmet is here!' / 'Ahmet must be here!'

(c) … Akşam-a Murat-lar gel-**iyor!** / # gel-**ir**!
evening-DAT Murat-PLU come-**Iyor** come-**Xr**
'Murat and his family are coming / will come this evening!'

Similarly, while *-Iyor* and *-Ø* (as well as *-(y)AcAG, -DI,* and *-mIş*) are possible in the existence of adverbs which indicate an evidential dependence, *-Xr* and *-DIr* are incongruous, even when surprise is not involved:

(8.281) Demek ki / Anlaşılan / Galiba
thus evidently apparently

(a) … Ahmet gel-**iyor** / #gel-iyor-**dur**.
Ahmet come-**Iyor** come-CONT-**DIr**
'Ahmet is coming.' / 'Ahmet must be coming.'

(b) … ekolojik denge hızla bozul-**uyor** / # bozul-makta-**dır**.
ecological balance rapidly deteriorate-**Iyor** deteriorate-PROG-**DIr**
'The ecological balance is being destroyed rapidly.'

(c) … Ahmet bura-da-**Ø** / #bura-da-Ø-**dır**.
Ahmet here-LOC-**Ø** here-LOC-Ø-**DIr**
'Ahmet is here.' / 'Ahmet must be here.'

(d) … bu yıl mahsül bol ol-**acak** / #ol-**ur**.
this year crop abundant be-**(y)AcAG** be-**Xr**
'The crop will (certainly) be / will probably be abundant this year.'

(e) … Ahmet gel-**di** / gel-**miş** / #gel-miş-**tir**.
Ahmet come-**DI** come-**mIş** come-EPAST-**DIr**
'Ahmet has come.' / 'It turns out that Ahmet has come.' / 'Ahmet must have come.'

When such an evidential connection is indicated, *-Iyor* and *-Ø* will replace *-Xr* and *-DIr* even when the expressed SoA is temporally unrestricted (ATEMPORAL):

(8.282) Demek ki / Anlaşılan / Galiba
thus evidently apparently

(a) … Ahmet dondurma-ya #bayıl-**ır** / bayıl-**ıyor**.
Ahmet ice.cream-DAT adore-**Xr** adore-**Iyor**
'Ahmet adores ice cream.'

(b) … Neşe alıngan bir #insan-**dır** / insan-**Ø**.
Neşe touchy a person-**DIr** person-**Ø**
'Neşe is a touchy person.'

8.4.7 Yavaş's distinction between 'stage-level' vs. 'object-level' predication

Yavaş (1980, 1982a,b) maintains that *-Xr* and *-Iyor* express, respectively, what Carlson (1977) identifies as 'stage-level' and 'object-level' (or 'individual-level') predication: While *-Iyor* expresses temporal stages of objects, *-Xr* says something about objects themselves by expressing what is "typical, normal, or even inherent to an entity or to a situation" (Yavaş 1982a: 45). For instance, the

utterance with *-Xr* in (8.283) praises the butcher for his characteristic or typical behavior, but its counterpart with *-Iyor* in (8.284) simply reports occurrences of selling good meat:

(8.283) Ben-im kasab-ım iyi et sat-**ar**.
P1SG-GEN butcher-POSS-A1SG good meat sell-**Xr**
'My butcher sells good meat.'
(Yavaş 1980: 101, 1982a: 47)

(8.284) Ben-im kasab-ım iyi et sat-**ıyor**.
P1SG-GEN butcher-POSS-A1SG good meat sell-**Iyor**
'My butcher is selling good meat.'
(Yavaş 1980: 101, 1982a: 47)

The analysis presented here subsumed the uses of *-Xr* which denote an inherent, characteristic, or typical property or behavior under the more general case of 'temporal unrestrictedness' (expressed by ATEMPORAL; see section 8.2.1.1). Although temporal unrestrictedness often implies a typical property or behavior, this is not always true. For instance, Yavaş's (1982a: 41) own example replicated in (8.285) below cannot sensibly be elucidated by saying that 'four' is a characteristic or typical property or behavior of 'two times two'. Similarly, in (8.286), it is difficult to conceive 'being rarely seen in the locality' as an inherent, typical, or characteristic property or behavior of turtles. For both sentences, it makes perfect sense to say that the predications are not associated with any specific temporal location or temporal range:

(8.285) İki kere iki dört ed-**er**.
two times two four make-**Xr**
'Two times two makes four.'
(Yavaş1982a: 41)

(8.286) Kaplumbağa bu yöre-de ender gör-ül-**ür**.
turtle this locality-LOC rarely see-PASS-**Xr**
'Turtles are rarely seen in this locality.'

Yavaş's characterization also falls short in accounting for why both *-Xr* and *-Iyor* can be used to denote a characteristic property or behavior of a kind or entity. Some such pairs already appeared in sections 8.2.3 and 8.2.4. Two of them are replicated in (8.287) and (8.288) below. The difference between *-Xr* and *-Iyor* in such examples cannot be understood well unless epistemic categories are distinguished in addition to temporal ones. To repeat, *-Xr* signals here general validity (GENERAL FACT), while *-Iyor* signals either well-assimilated personal certainty (CERTAIN) or newly apprehended information (NEW INFORMATION):

(8.287) Ay döngü-sü-nü 28 gün-de tamaml-**ar.** / tamaml-**ıyor.**
moon cycle-POSS-ACC 28 day-LOC complete-**Xr** complete-**Iyor**
'The moon completes its cycle in 28 days.'

(8.288) Kertenkele-ler karanlık-ta gör-**ür.** / gör-**üyor**!
lizard-PLU darkness-LOC see-**Xr** see-**Iyor**
'Lizards see in the dark(./!)'

Another shortage of Yavaş's characterization of *-Iyor* as a marker of stage-level predication is that it does not distinguish an occurrence at the reference time (SIMULTANEOUS) (8.289) from repeated occurrences around the reference time (RECURRENT) (8.290):

(8.289) Hatice (şimdi/ şu an-da) uyu-**yor**. (Replicated from section 8.2.2.1)
Hatice now this moment-LOC sleep-**Iyor**
'Hatice is sleeping (now / at the moment).'

(8.290) Şimdi-ler-de (sık sık) balığa çık-**ıyor**-um. (Replicated from section 8.2.2.2)
now-PLU-LOC often fish-**Iyor**-A1SG
'I am going fishing quite often these days.'

8.4.8 Accounting for the differences between futures with *-(y)AcAG*, *-Xr*, and *-Iyor*

Yavaş (1980, 1982a, and particularly 1982b) discusses the differences between futures made with *-(y)AcAG*, *-Xr* and *-Iyor*. According to her, *-Xr* expresses a lower degree of certainty compared to both *-Iyor* and *-(y)AcAG*. She also maintains that *-Iyor* denotes a higher degree of certainty compared to *-(y)AcAG*. The analysis presented here supports Yavaş's observation that *-Xr* conveys the least degree of certainty among the three options: Futures with *-Xr* were shown to be associated with epistemic modality (see section 8.2.1.3). But Yavaş's contention that futures with *-Iyor* express the highest degree of certainty is suspicious. For instance, in the following pair, *-Iyor* and *-(y)AcAG* do not exhibit any difference as to the speaker's confidence as to the truth of Ahmet's departure to Istanbul:

(8.291) Ahmet yarın İstanbul-'a gid-**iyor** / gid-**ecek**.
Ahmet tomorrow Istanbul-DAT go-**Iyor** go-**(y)AcAG**
'Ahmet is going to Istanbul tomorrow / will go to Istanbul tomorrow.'

Yavaş also maintains that futures with *-Iyor* are only used in the existence of a present decision, plan, arrangement or schedule for the carrying out a future event.[117] Although this condition seems to hold in most instances of *-Iyor* futures, it appears to be too specific for a general

[117] Johanson (1994: 255) proposes a similar account when he states that futures with *-Iyor* involve 'Planmässigkeit'.

characterization. As illustrated in the examples below, *-Iyor* can also be found in future utterances when such a prearrangement is absent:

(8.292) Pazar gün-ü hava aç-**ıyor** / güneş-li-**Ø**. (e.g., on the basis of weather reports)
Sunday day-POSS weather open-**Iyor** sun-ASC-**Ø**
'On Sunday clouds will dissipate/it will be sunny.'

(8.293) (Anket-ler-e göre) seçim-i biz kazan-**ıyor**-uz.
poll-PLU-DAT according election-ACC we win-**Iyor**-A1PL
'(According to the polls) we are going to win the election.'

(8.294) Acele-ye gerek yok. Nasıl ol-sa geç kal-**ıyor**-uz.
hurry-DAT need NEG.EXCP how be-COND late stay-**Iyor**-A1PL
'There's no point in hurrying up. We will be late anyhow.'

The epistemic distinctions in the semantic space of anchoring categories enable a neat account of the differences among futures rendered by *-(y)AcAG, -Xr* and *-Iyor*. 'Definite futures' with *-(y)AcAG* (8.295) associate a future occurrence with well-assimilated, personal certainty (CERTAIN). 'Indefinite futures' with *-Xr* (8.296) express a less-than-certain estimation of the speaker (PROBABLE). And futures with *-Iyor* (8.297) emphasize the 'news' value or the immediate significance of the conveyed piece of information (NEW INFORMATION). This immediate epistemic significance typically obtains when a present schedule, plan, or program exists for a future event, but such premeditation is not strictly necessary.

(8.295) Toplantı saat sekiz-de başla-**yacak**.
Meeting hour eight-LOC start-**(y)AcAG**
'The meeting will (certainly) start at eight.'

(8.296) Toplantı saat sekiz-de başl-**ar**.
Meeting hour eight-LOC start-**Xr**
'The meeting will (probably) start at eight.'

(8.297) Toplantı saat sekiz-de başl-**ıyor**.
Meeting hour eight-LOC start-**Iyor**
'The meeting starts at eight.'

8.4.9 The partitioning of imperfectivity by *-Xr*, *-Iyor*, and *-mAktA*

The aspectotemporal framework developed by Johanson (1971, 1994, 1996, 2000a, 2001) introduces three main categories of 'aspectual terminality', which stand for different ways of conceiving an event in relation to an 'orientation point' (reference time): 'Intraterminality' ('Intraterminalität') envisages an event within its temporal boundaries, 'postterminality' ('Postterminalität'), after its

end boundary, and 'adterminality' ('Adterminalität'), in the attainment of its relevant boundary.[118] Each of these terminality values are further subcategorized as to their 'focality' ('Prägnanz'), which stands for the degree of actional concentration around the orientation point. Johanson (2000a) distinguishes three focality values: non-focality (NF), relatively low focality (LF), and relatively high focality (HF). Johanson identifies *-Xr* is a non-focal intraterminal (+INTRA^{NF}), and *-Iyor* and *-mAktA* as focal intraterminal operators, *-mAktA* being more focal (+INTRA^{HF}) than *-Iyor* (+INTRA^{LF}).

Johanson's designation of *-Xr* as a non-focal and of *-Iyor* as a focal intraterminal viewpoint operator captures the fact that *-Iyor,* but not *-Xr,* can express events for which the actional concentration is around the reference time. However, it falls short in explaining how *-Iyor* can replace *-Xr* in conveying the same temporal value, as illustrated in the pairs below (the first one replicated from section 8.2.2.4). In these examples, both *-Xr* and *-Iyor* convey temporal unrestrictedness (which amounts to ATEMPORAL in the present framework and non-focal intraterminality in Johanson's system). Here, their difference was shown to be epistemic in nature: *-Iyor* presents a proposition as a matter of personal certainty (CERTAIN) or new discovery (NEW INFORMATION), while *-Xr* presents it as a strongly factual piece of information (GENERAL FACT):

(8.298) Ay döngü-sü-nü 28 gün-de tamaml-**ar** / tamaml-**ıyor**.
moon cycle-POSS-ACC 28 day-LOC complete-**Xr** complete-**Iyor**
'The moon completes its cycle 28 days.'

(8.299) Ahmet kahve-den nefret ed-**er** / nefret ed-**iyor**.
Ahmet coffee-ABL hate-**Xr** hate-**Iyor**
'Ahmet hates coffee.'

Johanson's identification of *-mAktA* as more focal than *-Iyor* can be challenged by examples where *-mAktA* (with or without *-DIr*) expresses relatively extended SoAs, as in (8.300) below (replicated from sections 8.1.4 and 8.301). *-mAktA* can even express repeated occurrences around the orientation point (RECURRENT) (8.302; replicated from section 8.2.4.1), or convey that a SoA has been obtaining for a long time (PERFECT/persisting/) (8.303; replicated from section 8.2.4.2). As these examples make it clear, *-mAktA* does not consistently denote a narrower actional concentration around the reference time compared to *-Iyor*:

(8.300) Orman Bakanlığ-ı-nda müsteşarlık görevi-m-i sürdür-**mekte**-yim.
forest ministry-POSS-LOC undersecretary duty-POSS.A1SG-ACC continue-**mAktA**-A1SG
'I am continuing to work as an undersecretary in the Ministry of Forestry.'

[118] Compared to Comrie's (1976) terminology, the intraterminal view is similar to the imperfective aspect, the postterminal view to the perfect aspect, and the adterminal view to the perfective aspect, although these correspondences are not exact (see Johanson 2000a: 177-178).

(8.301) Mogan gölü Ankara sınır-lar-ı iç-i-nde yer al-**makta**-dır.
Mogan lake Ankara border-PLU-ACC inside-POSS-LOC place take-**mAktA**-DIr
'The lake Mogan is located within the borders of Ankara.'

(8.302) Bölge-de çok sık deprem etkinliğ-i kayded-il-**mekte**-dir.
region-LOC very frequent earthquake activity-POSS record-PASS-**mAktA**-DIr
'Very frequent earthquake activities are being recorded in the region.'

(8.303) Şirket 15 yıl-dır bilişim sektör-ü-nde faaliyet göster-**mekte**-dir
company 15 year-SINCE informatics sector-POSS-LOC function-**mAktA**-DIr
'The company has been active in the informatics sector for 15 years.'

Unlike Johanson's framework, which mainly draws on aspectotemporal features alone, the framework of anchoring categories developed here recruits epistemic and volitional dimensions in addition to temporal ones. As such, it allows a more accurate characterization of the semantic functioning of *-mAktA* and of its contrast with *-Iyor*: The only condition which allows *-Iyor* but disallows *-mAktA* is epistemic immediacy (NEW INFORMATION). *-mAktA* can express SIMULTANEOUS and RECURRENT when the speaker signals GENERAL FACT by using *-DIr* (section 8.2.4.1). *-mAktA* is also acceptable on its own when well-assimilated personal certainty (CERTAIN) is at stake, as in (8.304 and 8.305) below. But unlike *-Iyor,* it cannot index newly emerged evidence, for instance, in expressing the speaker's surprise (8.306 and 8.307). These observations suggest that *-mAktA* is best characterized as a 'non-evidential imperfective marker'. Its incompatibility with scheduled futures (8.308) and with explicit performatives (8.309) (both of which have been analyzed as conveying NEW INFORMATION) confirms this characterization:

(8.304) ? Ahmet şu an-da çalış-**makta**.
Ahmet this moment-LOC work-**mAktA**
'Ahmet is working at the moment.'

(8.305) ? Ahmet sık sık uğra-**makta**.
Ahmet often drop.by-**mAktA**
'Ahmet occasionally drops by.'

(8.306) # Aa! Ahmet uyu-**makta**!
oh Ahmet sleep-**mAktA**
'Oh! Ahmet is sleeping!'

(8.307) # Kaç-ın! Aslan gel-**mekte**!
run.away.IMP.A2SG lion come-**mAktA**
'Run away! A lion is coming!'

(8.308) # Tren saat üç-te kalk-**makta**.
train hour three-LOC leave-**mAktA**
'The train leaves at three o'clock.'

(8.309) # Siz-i karı koca ilan et-**mekte**-yim.
P2SG-ACC wife husband declare-**mAktA**-A1SG
'I declare you husband and wife.'

8.4.10 Assigning semantic content to what has been taken as pragmatic extensions

Some of the uses of *-Xr*, *-Iyor* and *-DIr* identified in the present treatment have previously been taken as 'pragmatic extensions' to some prototypical or general meaning or use. For instance, Yavaş (1980: 105-110) takes the element of 'volition', which is present in the uses of *-Xr* in promises, requests, and polite imperatives, as a conversational implicature (8.310). Similarly, Johanson (1994: 255) takes the use of *-Xr* for future reference as in (8.311) as an implication of the non-focal aspectotemporal value of the marker. As another example, Aksu-Koç (1995: 279-280) links the sense of factuality conveyed by *-DIr* in utterances like (8.312) to a pragmatic inference licensed by the assumption of the 'authority', 'reliability', or 'credibility' of the illocutionary source:

(8.310) San-a borç para ver-**ir**-im.
2SG-DAT loan money give-**Xr**-A1SG
'I'll give you money.'
(Yavaş 1980: 105)

(8.311) Ali saat iki-de gel-**ir**.
Ali hour two-LOC come-**Xr**
'Ali will come at two o'clock.' (Translation mine)
(Johanson 1994: 255)

(8.312) Emlak Banka-sı ev-ler-i satış-a çık-mış-**tır**.
Emlak Bank-POSS house-PLU-ACC go on sale-EPAST-**DIr**
'Emlak Bank apartments have been put up for sale.'(Translation mine)
(Aksu-Koç 1995: 279)

Here, the above illustrated uses were descriptively identified as involving 'deictic willingness' (8.310), 'predictive future' (8.311), and 'strong illocutionary force' (8.312). These were all taken as conventional uses of *-Xr* and *-DIr* (rather than ultimately context-dependent implications) and matched with distinctive semantic categories (WANTED, POSTERIOR + PROBABLE, and GENERAL STATEMENT, respectively).

-Iyor, -Xr and *-DIr* have also been noted to have distinctive functions in narratives in the previous literature. For instance, Taylan (1987) detects *-Iyor* as the predominant tense in her subjects' narrations of a short film they have just been shown. Zeyrek (1994) shows that a switch from *-mIş* to *-Iyor* is observed in segments of folk tales where "actions/events crucial to the development of the plot-line are recounted". Johanson (1994: 254) identifies the use of *-Iyor* for 'historical present' ('historisches Präsens'). *-Xr* and *-DIr* have also been identified in narrative-related uses, e.g., in 'stage directions' (Lewis 1967/1978, Johanson 1971: 81) and in 'adult fictions and plays' (Aksu-Koç-1995: 280). Such uses of these markers have mostly been taken as pragmatic extensions to their 'basic' aspectual values. For instance, Johanson (1994: 254) accounts for the 'historical present' use of *-Iyor* by the possibility of using the marker relative to a past reference time. Similarly, Aksu-Koç (1995: 280) explains the use of *-Xr* and *-DIr* in 'adult fictions and plays' with reference to 'non-factivity', which she eventually links to the 'habitual/generic' aspectual value of these markers. Although the uses of *-Iyor, -Ø, -Xr* and *-DIr* in narratives were not included in the main analysis above, the proposed semantic framework paves the way for treating them as conventional semantic functions which involve different types of volitional displacements.[119]

8.4.11 Is *-DIr* a third person copular marker?

-DIr has sometimes been identified as a third person copular marker in formal registers and written language (Lewis 1967/1978: 97, 139-140, Johanson 1994: 253, Csató & Johanson 1998: 212; Kornfilt 1997: 81-82). But the analysis presented here supports Sansa's (1986) observation that *-DIr* is "not an innocent third person marker". It is true that *-DIr* is more frequently found formal-official registers and with 3rd persons than with 1st or 2nd persons. But this must be because (i) *-DIr* is favored in the official language due to the strong illocutionary force it generates (by signaling GENERAL STATEMENT), and (ii) the official language almost exclusively uses 3rd persons rather than the deictically immediate 1st and the 2nd persons. But strongly factual expressions with *-DIr* (those which signal GENERAL FACT) are not too infrequent the 1st and the 2nd persons, as illustrated below (the first two examples are from Sansa 1986):

(8.313) Genel olarak dikkatli bir şoför-sün-**dür** de.
general as careful a driver-A2SG-**DIr** CONJ
'And in general you are a careful driver.'
(Sansa 1986: 145)

[119] The use of *-Iyor* and *-Ø* in narratives can be linked to the element of deictic immediacy associated with these markers. Similarly, the use of *-Xr* and *-DIr* in stage directions may be related to the fact that these markers express generality in all the three domains of anchoring, since stage directions are not restricted to any specific instance of a play.

(8.314) Ev-i-ne bağlı koca-lar-ın tipik bir örneğ-i-yim-**dir** ben.
house-POSS-DAT loyal husband-PLU-GEN typical a example-POSS-A1SG-**DIr** P1SG
'I am a typical example of husbands devoted to their home.'
(Sansa 1986: 145)

(8.315) (Herkes bil-ir ki) bu iş-te usta-yım-**dır** / usta-yız-**dır**.
everyone know-HABG that this job-LOC master-A1SG-**DIr** master-A1PL-**DIr**
'(Everyone knows that) I am / we are skilled in this job.'

(8.316) Zaten sen ilginç bir adam-sın-**dır**.
anyhow P2SG interesting a man-A2SG-**DIr**
'You are an interesting person anyhow (this is an established fact).'

8.5 Summary

This chapter identified the conventional uses of *-Xr*, *-DIr*, *-Iyor* and *-Ø*, either as they appear as the sole TAM marker on a predicate or in combination with other TAM markers. Each of the identified uses was matched with one semantic category in each domain of anchoring. The analysis revealed that *-Xr* and *-DIr* typically express categories of generality (ATEMPORAL, GENERAL FACT and GENERAL STATEMENT) and epistemic modality (PROBABLE), while *-Iyor* and *-Ø* express categories of immediacy (SIMULTANEOUS, NEW INFORMATION and IMMEDIATE CONTRIBUTION) as well as repeated occurences (RECURRENT). These associations were depicted in the form of semantic maps. The results were then expanded on with comparisons to previous semantic analyses of *-Xr*, *-DIr*, *-Iyor* and *-Ø*.

Whatever synchronic relatedness may exist among the conventional uses *-Xr*, *-DIr*, *-Iyor* and *-Ø*, their present day semantic ranges can only be explained with reference to the successive changes in the form-meaning mappings in their history. The next chapter provides hypotheses about such diachronic phases of change and attempts to identify the factors that may have motivated each individual change.

Chapter 9

Explaining the ranges of polysemy

Chapter 8 has identified the semantic ranges conventionally associated with each of the Turkish TAM markers *-Xr*, *-Iyor*, *-DIr* and *-Ø,* and analyzed each identified use into its semantic building blocks (anchoring categories). This chapter investigates how the current ranges of polysemy of *-Xr*, *-Iyor*, *-DIr* and *-Ø* may have been formed. It proposes tentative explanations for successive stages of semantic change in their history, on the basis of diachronic data which primarily come from Erdal (2004), from the contributions in Johanson & Csató (1998), and from Adamović (1985).

The transcriptions of Old Turkic and Ottoman Turkish examples given in this chapter use the same notations as in the original sources, without providing interlineal glosses. Abbreviations for original text references are also given the way they appear in the source documents. Grammatical markers, in both their present day and earlier forms, are referred to using abstract phonemic representations, in conformity with the conventions given in the Abbreviations.

9.1 The Turkic family and the history of Turkish

Turkish makes part of the Western group of the Oghuz branch in the Turkic family, of which other members include Gagauz and Azerbaijani. In Johanson's (1998b) panchronic classification, Oghuz Turkic (the southwestern), Kipchak Turkic (the northwestern), Uyghur Turkic (the southeastern) and Siberian Turkic (the northeastern) are taken as constituting 'Common Turkic'. Oghur (Bulghar) Turkic (represented by Chuvash) and Arghu Turkic (represented by Khalaj) are early deviations from Common Turkic.

The diachronic account given in this chapter roughly distinguishes three phases in the history of Turkish: (1) Old Turkic, (2) Ottoman Turkish, and (3) Modern Standard Turkish. The term Old Turkic is commonly applied to the language which underlies three groups of corpora dating from the 7th or 8th century to the beginning of Mongol rule in 13th century (von Gabain 1941, Johanson 1998b, Erdal 1998, 2004). These corpora include (i) runiform scripts discovered in the Orkhon valley in present day Mongolia, in the upper Yenisey basin and in central South Siberia (this collection of texts is taken by Johanson (1998b) as representing 'East Old Turkic proper') (ii) Old Uyghur runiform scripts and manuscripts, dating from the 9th to the 13th centuries, which mostly include religious (predominantly Buddhist) and administrative texts. (iii) two books written in Arabic script in the 11th century in the Karakhanid state: *Qutadgu Bilig* 'Wisdom that brings good fortune', which is a 6500-couplet poem by Yūsuf Khāss Ḥājib of Balasagun, and *Dīvānu luġāti 't-*

Turk 'Compendium of the Turkic Dialects', which is Maḥmūd of Kāšġar's didactic description of Turkic dialects.[120]

Around the end of 13th century, the Seldjuk dominance in Anatolia was replaced by a number of small principalities, which began to use varieties of West Oghuz Turkish as their administrative language. One of them, Ottoman Turkish, dates back to the foundation of the Ottoman principality in about 1300 (Kerslake 1998: 179). The early stage of Ottoman Turkish (between early 14th to the late 15th century), together with concomitant varieties of Oghuz Turkic in Anatolia, is often designated as 'Old Anatolian Turkish'. After the late 15th century, Ottoman Turkish was heavily influenced by Persian and Arabic in its various registers, borrowing from these languages several lexical elements as well as certain grammatical constructions.

"Modern Standard Turkish" denotes the official language of the Republic of Turkey from its foundation in 1928 to the present day. Based on the Istanbul dialect of Ottoman Turkish, it has evinced a gradual diminution of Arabic and Persian influence, some neologisms from Turkish proper, and new loanwords (mostly form the technological sphere) from French and more recently, from English.

9.2 A brief history of *-Xr*, *-Iyor*, and *-DIr*

-Xr is the oldest TAM marker of Turkish. Erdal (2004: 240-241) identifies its alternate forms in Old Turkic as *-r*, *-Ar*, *-Xr*, *-Ur*, and *-yUr*. Johanson (1998b: 116) represents the form as *-(y)Vr* in Old Turkic and conjectures that it descends from the combination of the old converbial suffix *-(y)V* and the old copular verb *är* 'be'.

-Iyor is a relatively late introduction to the Turkish TAM system. It descends from the combination of the converb *-(y)X* with *yür-Xr*, which is the inflection of the Ottoman Turkish auxiliary verb *yüri* 'walk' in (*yürü* in Modern Standard Turkish) with *-Xr* (Lewis 1967/1978: 108, Kerslake 1998: 193). This auxiliary existed in Old Turkic in the form of *yorı* and emphasized the temporal type 'durativity' with dynamic events, as illustrated by Erdal's (2004) example in (9.1). In the late 14th and 15th century Old Anatolian Turkish, especially in the spoken language, it is found

[120] Johanson (1998b: 85) states that the Old Uyghur texts "reflect a language that is basically similar to East Old Turkic", and that the Karakhanid language is "close to Old Uyghur, though its vocabulary is influenced by Arabic and Persian". Similarly, Erdal (2004: 10) reports that the grammar of the three corpora are close enough to justify a single grammatical description, and further takes Old Turkic as "a specific language once spoken in central regions of Asia […] rather than an abstract stage in the history of Turkic". It has been pointed out that Old Turkic is particularly similar to the Oghuz branch of the Turkic family (e.g., Doerfer 1976: 83), of which Ottoman Turkish and Modern Standard Turkish are members. While Johanson (1998b: 85) suggests that Orkhon scripts "may be taken to represent a Common Turkic that has not yet split into Oghuz, Kipchak and Uyghur", Erdal (2004: 10-11) abstains from taking Old Turkic as the direct ancestor of Common Turkic, since it manifests certain phonological and morphological changes which are not observed in some languages within Common Turkic. Still, he acknowledges that "the ancestor of Common Turkic (as a theoretical construction) was, in any case, probably quite similar to Old Turkic in many respects".

in the form of *-(y)X-yUrUr*, as illustrated in Adamovič's (1985) example in (9.2). The further shortened form *-IyUr* is attested in the late 15th century (Kerslake 1998: 193, Adamovič 1985: 118), as illustrated in (9.3). Both *-(y)X-yUrUr* and *-IyUr* expressed ongoingness with both dynamic and static predicates (i.e., they expressed the anchoring category SIMULTANEOUS). *-IyUr* eventually evolved into its present shape *-Iyor,* and recently extended its semantic range to the expression of contingently repeated events (RECURRENT) in addition to SIMULTANEOUS (see section 8.2.2.2).

(9.1) Kamag on bölök šastr yaratdï; amtï barča kenür**ü yorïyur**.
'He composed a sastra of all in all ten chapters; at present he is busy elaborating on it all'.
(Erdal 2004: 252; Ht V I b 5)

(9.2) gel**iyürür**/ yat**ayurur** / bašla**yïyurur**.
'He is coming / is lying down / is beginning.' (Translation mine)
(Adamovič 1985: 117)

(9.3) Kāfir čerisi gel**iyür**.
'Es kommt das Heer fer Ungläubigen.'
'The army of the infidels is coming.' (Translation mine)
(Adamovič 1985: 118; DANÏŠMEND 203)

-DIr descends from *-(y)X tur-ur*, which incorporates the old converbial suffix *-(y)X* and the inflection of the old auxiliary *tur* 'stay, stand' (present day *dur*) with *-Xr* (Lewis 1967/1978: 96, Kerslake 1998: 191-192). Erdal's (2004) examples in (9.4) and (9.5) illustrate the use of this combination for the temporal type persistent durativity (with or without iteration) in Old Turkic. The combination *-(y)lp tur-ur* (along with *-mlş tur-ur*) expressed present results of completed events (i.e., a 'state of result') (Erdal 2004: 250-251, 255), as in (9.6). In the 14th century Ottoman Turkic, *-(y)X tur-ur* appears as *-DUrUr* or *-DUr,* and *-(y)lp tur-ur* as *-(y)UB-DUrUr* or *-(y)UBDUr* (Kerslake 1998: 192-193). In the 14th century example given in (9.7) (replicated from Kerslake 1998), *-(y)UBDUr* expresses PERFECT/result/, while *-DUr* (attached to the non-verbal predicate *ne* 'what') expresses a state obtaining at the temporal center (SIMULTANEOUS):

(9.4) Azkya öŋrä yorï**yu tur**zunlar; män una basa yetdim.
'Please walk on a bit; I will have reached you in a moment!'
(Erdal 2004: 251; Suv 615, 14)

(9.5) Kut kolu alkïš pašik a**yu turur** sizlär.
'You keep praying for grace and intoning blessing and hymns.'
(Erdal 2004: 250; ManBeicht 6)

(9.6) Täŋri kïrkïnlarïn täŋri ogulanlarïn alkamïš törütmiš ol, kim ol örginniŋ özin täg ortosïn täg … bol**up turur**lar.
'He has created the divine maidens and divine youths, who have become as the hearth and center … of that throne'.
(Erdal 2004: 255; BT V 175)

(9.7) Šikāyeti ne**dür**? Ničün gel**übdür**?
'What is his complaint? Why has he come?'
(Kerslake 1998: 193)

Before *-IyUr/-Iyor* was established into the TAM system of Turkish, *-Xr* functioned as a general 'imperfective' marker (i.e., covered all three of SIMULTANEOUS, RECURRENT and ATEMPORAL), either used on its own or in combination with the past copulars *är-ti* and *är-miş* (present day *idi/-(y)DI* and *imiş/-(y)mIş*). Erdal's (2004) examples below illustrate the use of *-Xr* for expressing an ongoing event (SIMULTANEOUS) (9.8), a repeated occurrence (RECURRENT) (9.9) and a temporally unrestricted statement (ATEMPORAL) (9.10) in Old Turkic. Adamovič's (1985) example in (9.11) illustrates *-Xr* in expressing SIMULTANEOUS in the 14th century Ottoman Turkish:[121]

(9.8) Ymä bir kün bo tagda [öt]mäk aš aša**yur** ärdim…
'Well, one day I was eating bread and food on this mountain…'
(Erdal 2004: 264-265; DreiPrinz 42)

(9.9) Atïg ïka ba**yur** ärtïmïz.
'We used to tie the horses to trees.'
(Erdal 2004: 265; Tuñ)

(9.10) Yerimin suvumun kon**ar** köč**är** bän.
'I alternately settle and nomadize on my land.'
(Erdal 2004: 263; Runic inscriptions)

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[121] Johanson (1971: 132-133, 1998b: 116) identifies the old semantic range of *-Xr* as 'intraterminality' that covers both low and high degrees of 'focality' (see also Kerslake 1998: 193). In the present semantic framework, a high degree of focality basically corresponds to SIMULTANEOUS, a medium degree to RECURRENT, and a low degree to ATEMPORAL.

Although the use of *-Xr* for high focality (SIMULTANEOUS) was largely replaced by *-Iyor* after the late 15th century, it survived in later Ottoman Turkish, as illustrated by Johanson's (1971) 18th century example replicated in (i) below. It can still be found colloquially today, more often in some dialects than in others (ii):

(i) İštä gäl**ür**, baqïnïz.
'Look, there is he coming!'
(Akyüz 1959/1988: 291, cited in Johanson 1971: 133)

(ii) Ne yap**-ar**-sın?
what do-*Xr*-A2SG
'What are you doing?'

(9.11) Dẹrem ṭoγrusïn saŋa.

'Ich sage dir die Wahrheit.'

'I'm telling you the truth.' (Translation mine)

(Adamovič 1985: 49; FERHENG 226)

Further evidence reveals that *-Xr* was actually more than a general imperfective marker before *-Iyor* came on the stage. It could convey a perfect of persisting situation (PERFECT/persisting/), as seen in Erdal's (2004) Old Turkic example in (9.12) and Kerslake's (1998) 14th century Ottoman Turkish example in (9.13). It was also used for predictive futures (POSTERIOR + PROBABLE), as illustrated by Erdal's (2004: 264) Old Turkic example in (9.14) and Adamovič's (1985) example from the late 14th century Ottoman Turkish (9.15).[122] Adamovič's (1985) example in (9.16) shows that *-Xr* was also used in explicit performatives (i.e., signaled IMMEDIATE CONTRIBUTION) in Old Anatolian Turkish:[123]

(9.12) …ïnčïp amtïkatägi mäniŋ köŋülüm naŋ ornan**maz**.

'…Till now, however, my hart has not been calming down.'

(Erdal 2004: 263-264; TT II,1 40)

(9.13) Niǰe gündür otla**r**dum ot.

'For many days I had been eating grass'.

(Kerslake 1998: 193)

(9.14) Ken kältäci burxanlar burxan kutïn kanta bul**ïr**lar?

'Where will the future Buddhas attain Buddhadom?'

(Erdal 2004: 264; Maitr)

(9.15) Ol öldi ben daxï öl**ür**em.

'Er ist gestorben, und ich werde auch sterben.'

'He died, and I will die too.' (Translation mine)

(Adamovič 1985: 50; AHMEDI 131)

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[122] Throughout the history of Turkish, 'prospective' and 'unmodalized' futures have been expressed by markers other than *-Xr*: *-dAcI* in Orkhon Turkic and *-GAy* in the rest of Old Turkic (Erdal 1998: 146, 2004: 242-243, 263), *-(y)IsAr* and *-(y)AsI* (the former only until the 16th century) in Old Ottoman (Johanson 1998b: 116, Kerslake 1998: 193-194), and *-(y)AcAG* from the 14th century until the present day (Kerslake 1998: 194). This suggests that *-Xr* has always been restricted to 'uncertain' or 'predictive' futures (POSTERIOR + PROBABLE), as it still is in Modern Standard Turkish.

[123] Although explicit performatives are typically marked by *-Iyor* in Modern Standard Turkish (as shown in section 8.2.2.6), *-Xr* retained this use in the formal and official registers. Such expressions may have proven resistant to change because of their formulaic nature.

(9.16) And ič**er**em kim išböyle eyleyem.
'Ich schwöre,das ich so tun werde.'
'I swear that I will do so.' (Translation mine)
(Adamovič 1985: 49; XÏLAF 44r)

9.3 Accounting for the semantic changes in the history of *-Xr*, *-DIr*, *-Iyor* and *-Ø*

The diachronic data presented above suggest that the history of *-Iyor* and *-DIr* is characterized by semantic advancement (gradual acquisition of new uses) and that of *-Xr* by semantic recession (gradual loss of existing uses due to the advancement of the competing marker *-Iyor*). The following sections hypothesize successive phases of semantic change in the diachronic development of *-Iyor*, *-DIr*, *-Xr* and *-Ø* and propose possible motivations for each hypothesized phase.

9.3.1 Hypothesized phases in the diachronic development of *-Iyor*

In Phase I, the lexical verb *yorı* 'walk' came to be used as an auxiliary, in the form of *-(y)X yor-Xr*, to express the temporal type (Aktionsart category) 'dynamic durativity'. One possible motivation for this change is a metaphorical mapping from the spatial domain to the temporal domain, i.e., the extrapolation of the progress in space to the progress in time. A second, complementary motivation can also be hypothesized: the verb *yorı,* as an inherently dynamic verb, already entailed 'dynamic durativity' in its lexical sense, and this temporal type was generalized in the use of the verb as an auxiliary.

In Phase II, *-(y)X yor-Xr* (which appears as *-(y)X yür-Xr* in early Ottoman Turkish) evolved into the bound form *-Iyor* through the intermediate stages *-(y)X-yUrUr* and *-IyUr.* This formal reduction was accompanied by a semantic shift from the temporal type 'dynamic duration' to 'continuous aspect' (subsumed here under the anchoring category SIMULTANEOUS). Since *yüri* 'walk' was a dynamic verb, one can conjecture that *-(y)X yür-Xr* first expressed SIMULTANEOUS with dynamic SoAs (e.g., expressed the 'progressive aspect') and later extended to states. The semantic change from 'dynamic durativity' to the progressive aspect presumably represents the conventionalization of a frequently occurring pragmatic contiguity: A 'progress' is at stake only for dynamic durative SoAs and not with punctual nor stative ones. The subsequent semantic generalization from progressive aspect (SIMULTANEOUS with dynamic SoAs) to continuous aspect (SIMULTANEOUS with stative SoAs) may have been motivated by what can be called 'referential similarity': Both of these uses express SoAs that obtain at the temporal center.

A parallel development can be hypothesized for this phase: *-(y)X-yUrUr/-IyUr/-Iyor* must have been associated with epistemic and volitional immediacy (NEW INFORMATION and IMMEDIATE CONTRIBUTION) as soon as they came to convey SIMULTANEOUS. This is because these three

categories of immediacy typically go hand in hand in actual communication: Information about a SoA which happens at the time of utterance is often not well-assimilated to the speaker's current knowledge state (see, e.g., Nichols' (1986: 254-256) generalization as to covariance between 'imperfectivity' and 'immediate' meaning). Similarly, an utterance which directly signals the speaker's immediate intention (e.g., a declaratory utterance) always creates a de-facto situation which is both temporally immediate and epistemically new.

In Phase III, *-Iyor* was further extended to the expression of contingently repeated SoAs (RECURRENT) in addition to SIMULTANEOUS. This development, which allowed *-Iyor* to be used with punctual SoAs in addition to durative ones, must have been motivated by referential similarity, since both of these anchoring categories include the temporal center in the temporal range they refer to.[124] This extension may have been facilitated by the fact that *-Iyor* could already convey SIMULTANEOUS with states. This combination often implies an extension in time (see section 5.1.1), which is also involved in the expression of RECURRENT.

In Phase V, as the association of *-Iyor* with epistemic contingency (CERTAIN and NEW INFORMATION) became stronger, it came to be used for PERFECT/persisting/ and ATEMPORAL when these epistemic categories were at stake. The association of *-Iyor* with NEW INFORMATION enabled it to be used for scheduled futures too. This process can be seen as a semantic generalization accompanied by partial bleaching: The loosening of the temporal and the reinforcement of the epistemic associations of *-Iyor* granted the marker a wider semantic applicability. One can also assume that referential similarity was a facilitating factor in the extension of *-Iyor* to PERFECT/persisting/and ATEMPORAL from RECURRENT, since all of these three categories include the temporal center in the temporal period they allude to.

The temporal territory of *-Iyor* has recently been threatened by *-mAktA*. As shown in sections 8.1.4, 8.2.4.1, 8.2.4.2 and 8.4.9, *-mAktA* competes with *-Iyor* in the expression of the temporal categories SIMULTANEOUS, RECURRENT and PERFECT/persisting/, and primarily differs from *-Iyor* in its epistemic associations.

9.3.2 The gradual reduction of the semantic range of *-Xr*

As mentioned above, *-Xr* expressed the full spectrum of imperfectivity until the 14th century: It could be used for SIMULTANEOUS, RECURRENT, as well as ATEMPORAL. It also expressed PERFECT/persisting/, predictive future (POSTERIOR + PROBABLE), and explicit performatives (IMMEDIATE CONTRIBUTION). Since every utterance signals one anchoring category from each of the

[124] Cross-linguistically, markers of 'continuous aspect' seem to have a tendency to extend to 'habitual aspect'. Bybee, Perkins & Pagliuca 1994: 127) report that "[…] historical and comparative evidence exists in Turkic, Dravidian, and Celtic languages, as well as in dialects of Yoruba, which shows constructions with progressive meaning developing into presents or imperfectives".

three domains of anchoring, we can assume that before *-Iyor* came into stage, *-Xr* (when used as the only TAM marker) also expressed the epistemic and volitional categories strongly associated with the above listed temporal categories (i.e., not only with GENERAL FACT, PROBABLE and GENERAL STATEMENT as it is the case in Modern Standard Turkish, but also with CERTAIN, NEW INFORMATION, ASSERTION and IMMEDIATE CONTRIBUTION, which are all covered today by *-Iyor* rather than *-Xr*).

As *-(y)X-yUrUr/-IyUr/-Iyor* was established as a full-fledged TAM marker, it took over SIMULTANEOUS (and later, RECURRENT) from *-Xr*, reducing the latter's semantic range to ATEMPORAL in the spectrum of imperfectivity.[125] *-Xr* retained its previous uses for prediction (POSTERIOR + PROBABLE) and for PERFECT/persisting/. This specialization in the temporal domain had consequences in the epistemic and volitional domains too: As *-Iyor* became more strongly associated with epistemic and volitional contingency (CERTAIN and NEW INFORMATION in the epistemic, ASSERTION and IMMEDIATE CONTRIBUTION in the volitional domains), *-Xr* was restricted to GENERAL FACT and PROBABLE in the epistemic, and to GENERAL STATEMENT in the volitional domains.

Although *-Xr* ended up with its current day semantic range through a process of semantic recession (specialization) rather than semantic advancement (extension), one can still identify factors which have played a role in the stabilization of its current semantic range. For instance, the stabilization of *-Xr* in expressing categories of generality may be partly due to the communicative consonance among these categories: Strong factuality (GENERAL FACT) typically accompanies temporal unrestrictedness (ATEMPORAL) (e.g., gnomic sentences). Similarly, statements issued by social, political or institutional authorities (GENERAL STATEMENT) generally sound like established truths (GENERAL FACT). The contextual correlates of gnomic or characterizing (ATEMPORAL) utterances are similar to those of predictions (POSTERIOR + PROBABLE), since a prediction is normally based on observations about temporally unrestricted, typical and characteristic behavior of people or things.[126] The use of *-Xr* in offers, requests, and promises (WANTED) is apparently linked to its stative volitional uses (see section 8.2.5), since a speaker's expression of willingness often implies a directive illocutionary force.[127]

[125] Dahl (1985: 93) points to this process when he describes what has been happening in Turkish and Azerbaijani: "[w]hen PROG is opposed to a 'Simple Present' there is also the possibility of a shift to a situation where PROG takes on the role of an IPFV and the earlier 'Simple Present' develops into a category with primarily habitual use. This is apparently taking place in Turkish and Azerbaijani".

[126] Cross-linguistically, markers of generic-habitual aspect are often attested to express 'indefinite futures' (e.g., Bybee, Perkins & Pagliuca 1994: 156-157, 275-278; Haspelmath 1998).

[127] It is possible that stative uses of *-Xr* precede all of its other uses. *-Xr* was reported to have been used as a participle since the Old Turkish period (Von Gabain 1941/1988: 80, Üstüner 2000: 160, Erdal 2004: 284-285).

9.3.3 Hypothesized phases in the diachronic development of *-DIr*

In Phase I, the lexical verb *tur* 'stand, stay' evolved into the periphrastic form *-(y)X tur-ur*, which expressed the temporal type (Aktionsart category) 'persistent durativity'. Like the rise of *-(y)X yor-Xr* out of *yorı* 'walk', this development seems to involve a metaphorical mapping from the spatial domain (duration in space) to the temporal domain (duration in time). But a complementary mechanism must have been at work here too: Just as 'dynamic durativity' was inherent in the conceptual structure of *yorı* as a lexical verb, 'persistent durativity' was inherent (conceptually entailed) in the lexical meaning of *tur*. In other words, *tur* as a verbal predicate had already been expressing durativity, and this was conventionalized in *-(y)X tur-ur* as a distinctive semantic category. At this stage, *tur-ur* was also used with *-(y)Ip* or *-mIş* to express a 'state of result', which can be explained by the fact that this semantic dimension entails a state which endures at the reference time.

In Phase II, as *-(y)X tur-ur* evolved into *-DUrUr* and *-DUr,* it came to express the continuous aspect (SIMULTANEOUS). Here too, the motivation can be identified as contiguity in the semantic structure: durative SoAs often combine with the temporal category SIMULTANEOUS. In this phase, *-DUrUr* and *-DUr,* when used with *-(y)Ip* and *-mIş,* contributed to the expression of PERFECT. This can be explained by the referential similarity between a 'state of result' (Phase I) and PERFECT, since both of them refer to the present results of a past event.

In Phase III, *-(y)XyUrUr/-IyUr* replaced the uses of *-DUr* for continuous aspect (SIMULTANEOUS) (see Phase II in *-Iyor*).[128] This gave rise to a reanalysis of *-DUr* as the counterpart of *-Xr* in non-verbal predication*: -DUr* came to express ATEMPORAL with nominal, adjectival, and locative predicates. Just like *-Xr* with verbal predicates, it was also associated with the epistemic and volitional categories of generality (GENERAL FACT or GENERAL STATEMENT). This reanalysis is presumably channeled by the general distinction between verbal and non-verbal predication in the Turkish TAM system and facilitated by the structural origin of *-DUr* (the auxiliary *tur-ur,* which includes *-Xr* in its finite inflection*)*. In this phase, *-DUr* also ceased to attach to *-(y)Ip* (which gradually lost its converbial use in the finite inflectional paradigm of Turkish).[129]

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[128] Johanson (1998b: 114-115) reports that such 'high focal intraterminal' uses of *turur* (or its formally reduced successors) is found today in North West and South East Turkic as well as in Chuvash.

[129] *-(y)IpDIr* disappeared in Modern Standard Turkish, and *-(y)Ip* exists only as a conjunctive converb (i). *-(y)Adur* is still used to emphasize duration, as seen in Tosun's (1988) example in (ii):

(i) Yemeğ-i-ni yi-**yip** çık-tı.
meal-POSS-ACC eat-**(y)Ip** leave-PAST
'He had his meal and left.'

(ii) Sen gid-**edur**.
P2SG go-**(y)Adur**
'Get (2sg) going.' (Translation mine)
(Tosun 1988: 507-508)

In Phase IV, as *-DUr* became *-DIr* (in conformity with vowel harmony). It extended its morphosyntactic territory by attaching not only to non-verbal predicates and to *-mIş*, but also to *-(y)AcAG*, *-Iyor*, and *-mAktA*, taking advantage of the 'morphosyntactic nominalization' accomplished by these bound markers (see section 7.2). By relegating temporal categories to the bound markers which precede it, it gained the ability to convey only epistemic or volitional categories (i.e., GENERAL FACT or GENERAL STATEMENT). *-DIr* must have become a judgmental marker (one which expresses PROBABLE) in a similar way, i.e., by copying the component of PROBABLE in the predictive use of *-Xr*.

9.3.4 The rise of *-Ø* as a semantically distinctive option

As soon as *-DIr* was reanalyzed as the non-verbal counterpart of *-Xr*, *-Ø* was assigned semantic content due to its paradigmatic contrast with *-DIr*. Then *-DIr* and *-Ø* in non-verbal predication displayed a semantic opposition which is parallel to that between *-Xr* and *-Iyor* in verbal predication. Just like *-Iyor*, *-Ø* came to be associated with SIMULTANEOUS, RECURRENT, PERFECT/persisting/, CERTAIN and NEW INFORMATION. This process illustrates the mechanism identified in Bybee, Perkins & Pagliuca (1994: 294-295) as 'the development of zero grams', whereby the absence of an overt marker is ascribed a certain meaning due its paradigmatic value.

9.4 Relevance to previous literature on semantic change

The lexical origins of *-Iyor* and *-DIr* (*yürü* 'walk for *-Iyor* and *dur* 'stay, stand' for *-DIr*) show that these markers have undergone a process of grammaticalization.[130] Grammaticalization has often been identified with 'semantic generalization', i.e., the widening of the semantic applicability of a marker. Semantic generalization, in turn, is generally coupled with 'semantic bleaching', i.e. the loss of certain components of meaning (Bybee, Perkins & Pagliuca 1994: 291-292). Some phases of grammaticalization hypothesized above clearly involve semantic generalization due to bleaching. For instance, *-DIr* in Phase IV assumes a wider semantic applicability by releasing its temporal connotations to the bound markers which precede it. But in the generalization of *-Iyor* from progressive aspect (SIMULTANEOUS with dynamic SoAs) to continuous aspect (SIMULTANEOUS with stative SoAs) in Phase III, no semantic bleaching is involved. Similarly, *-Iyor* in Phase IV extends to RECURRENT without losing any semantic component. These observations support Fischer & Rosenbach's (2000: 18) claim that semantic generalization should not be strictly coupled with semantic bleaching.

The overall lines of development of *-Iyor* and *-DIr* can be seen to be directed towards increasingly subjective categories: They start as lexical items which express non-relative temporal

types (Aktionsart dimensions), then assume relative temporal categories, and finally extend into epistemic and volitional domains. Their semantic evolution hence confirms the hypothesis of 'subjectivitization' in grammaticalization, of which different versions are proposed by Traugott (1989, 1995, 2003) and by Langacker (1990, 1998, 2003).[131] Tabor & Traugott (1998) claim that unidirectionality in grammaticalization is best understood in terms of an increase in structural scope. The semantic evolutions of both *-Iyor* and *-DIr* land support to this hypothesis too, since newly acquired semantic components have always been hierarchically higher than (or at the same level with) the old ones.[132]

Most of the processes proposed above in the grammaticalization of *-Iyor* and *-DIr* involve uses in which both the old and the new semantic components coexist within the same semantic value. These processes can hence be understood in terms of *metonymy,* which refers to the naming of one entity or relation in terms of another one which is contiguous to it in the same semantic or pragmatic context. For instance, in the Phase I of both *-Iyor* and *-DIr,* the temporal type 'durativity' was maintained to have been conceptually contiguous to the lexical meanings of *yorı* 'walk' and *tur* 'stay. Similarly, in accounting for the Phase II of both markers, it was suggested that 'durativity' and 'continuous aspect' coexist in a single semantic value in most communicative contexts. The extension of *-Iyor* from SIMULTANEOUS to NEW INFORMATION and IMMEDIATE CONTRIBUTION was also accounted for in terms of semantic contiguity; these categories often come together in a single sentence due to their communicative consonance. Similar metonymic relations were proposed to have been at work in the stabilization of the current semantic range of *-Xr.* In addition to metonymic realtions, *referential similarity* was suggested to be effective in certain semantic changes, e.g., in those involved in the Phases II, III and IV of *-Iyor.*

In each hypothesized semantic change in the stories of *-Xr*, *-DIr -Iyor* and *-Ø*, explanations were grounded at the level of communication (rather than being based on conceptual relatedness

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[130] Grammaticalization (or, 'grammaticization') refers to the diachronic process whereby a marker gradually becomes more general and abstract in meaning, while its form undergoes phonetic erosion and becomes more dependent on its morphosyntactic and phonological environment.

[131] Traugott (1995: 31) describes 'subjectification' as "a pragmatic-semantic process whereby meanings become increasingly based in the speaker's subjective belief state/attitude toward the proposition". Langacker (1990: 17, 1998: 73) conceives subjectification as a certain kind of semantic change which involves "the realignment of some relationship from the objective axis to the subjective axis". Langacker's account of subjectivization, which involves the reinforcement of subjective (offstage) meanings and the erosion of less subjective (onstage) meanings, is particularly similar to Bybee, Perkins & Pagliuca's (1994: 289-293) account of semantic generalization due to bleaching. For instance, for the development of the prospective meaning of *is going to,* both Langacker (1998: 78-82) and Bybee, Perkins & Pagliuca (1994: 292) maintain that the temporal meaning (futurity) had been there from the beginning, i.e., constantly entailed in the original spatial use of the construction.

[132] One reservation is that 'scope' is conceived here in the semantic structure, while Tabor & Traugott (1998) associate it with the formal-syntactic structure.

alone).[133] Even when a metaphorical mapping or a uniform conceptual structuring across domains (e.g., the extrapolation from space to time in the Phases I of both *-Iyor* and *-DIr,* the extension of *-Iyor* in Phase II to epistemic and volitional immediacy, the stabilization of *-Xr* in expressing categories of generality) was acknowledged, a complementary, usage-based motivation was also proposed.[134]

The diachronic treatment presented above shows how language-internal structural factors can be effective in semantic change. For instance, the reanalysis of *-DIr* as the counterpart of *-Xr* (Phase IV) was shown to be guided by the formal distinction between verbal and non-verbal predication in the general TAM system. Similarly, the assignment of a semantic value to *-Ø* was suggested to be due to its formal-paradigmatic contrast with *-DIr*.

Lastly, the account of *-Xr* also showed that semantic recession, which is underestimated in the literature, can be as important as semantic advancement in the evolution of a TAM marker.

9.5 Summary

This chapter outlined the historical developments of *-Xr*, *-DIr -Iyor* and *-Ø*, illustrated their semantic ranges at different stages in their histories and singled out certain phases of semantic change. It proposed hypotheses regarding motivatations for each semantic change and identified 'metonymic relations' and 'referential similarity' as two main motivations. On the whole, this chapter showed that the semantic framework of anchoring developed in Part II, which is primarily designed for dealing with synchronic phenomena in the semantics of TAM, can be effectively used in diachronic analyses too.

[133] The necessity of identifying a connection in actual use in semantic change is pointed to in Givón (1995) and in Dahl (1997), in their arguments against the 'distance metaphor' as a motivation in the development of irrealis uses of past. Givón (1995: 163) describes this connection as a 'diachronic beach-head' in the actual communicative context.

[134] Metaphorical transfer, which involves the mapping of an entity or relation from a (source) semantic domain to a similarly structured (target) one (e.g., Lakoff & Johanson 1980, Lakoff 1987), has been taken by some scholars as a chief driving force in grammaticalization (e.g., Sweetser 1988, 1990, Lichtenberk 1991). According to a more widely adopted view, metaphor cannot be the only relevant factor in grammaticalization, because it represents an abrupt leap across semantic domains, while diachronic evidence points to mid-stages in the process of conventionalization of new uses (e.g., Heine, Claudi & Hünnemeyer 1991: 151-152, Bybee, Perkins & Pagliuca: 1994: 283-285).

Chapter 10

Conclusion

This dissertation undertook two complementary tasks: The theoretical task of developing a purely semantic framework of TAM, and the empirical task of analyzing the ranges of polysemy of the Turkish TAM markers *-Xr*, *-DIr*, *-Iyor* and *-Ø*.

The semantic framework of anchoring developed in Part I presented a comprehensive yet neat account of how the semantic building blocks of TAM reference can be identified in terms of a perspective-based delimitation of the domains of time, knowledge and volition. It brought together ideas from the account of grounding in Cognitive Grammar, Sweetser's three conceptual domains, the layered structures of the Functional Grammar and the mechanism of space building in the Mental Space theory. It blended them into a single, coherent semantic-pragmatic account of TAM reference by incorporating insights from linguistic typology, speech act theory, intensional semantics and inferential theories of meaning. It formulated a language-independent semantic metalanguage which is capable of expressing the TAM-related part of the overall conventional meaning (semantic value) of any natural language utterance.

The semantic framework developed here is expected to enhance our understanding of the cognitive and communicative underpinnings of TAM reference. It is also expected to contribute to our knowledge on various pragmatic phenomena, including deixis, indexation, anaphoric reference, conventional implicatures (explicatures), discourse organization and the communication of illocutionary intentions. Some merits of the semantic framework of anchoring categories proposed here can be summarized as follows:

- It is cross-linguistically applicable, because it is based on universally significant cognitive and communicative factors. Since it uses purely semantic categories, it can handle any type of formal strategy in any language, which may include grammatical elements, lexical items, distinctive sentence types, intonational contours, or a combination of these.
- It is flexible, because it incorporates a semantic space that consists of gradual semantic dimensions rather than a finite number of semantic primes, parameters, or features. Semantic categories can be delimited on this semantic space at the desired level of specificity.
- It covers both situated/intentional aspects of semantics (signaling of anchoring relations) and generalized/objective reference (designation of SoAs).

- It provides insights into the cognitive infrastructure of language by revealing how the human cognitive system generates uniform structuring across semantic domains.
- Unlike some previous frameworks which merely posit hierarchical structures for sentence organization, it motivates the scope relations between different layers of sentence meaning with reference to the containment properties of higher-order entities.
- It yields holistic analyses. It investigates the meaning of a TAM marker in the context of the ecology of the sentence meaning as a whole. It also shows that sentence meaning is closely knit to higher levels of meaning organization, which includes mental space building and manipulation, discourse modes and speech acts.
- It firmly integrates semantics and pragmatics. It takes TAM reference as context-sensitive by its very nature, serving to 'anchor' an abstract predicational content into the current discourse and eventually in the immediate communicative context. It gives a principled account of how sentence meaning relates to the illocutionary act performed by the speaker and of how the speaker's intentions fit into the picture. It incorporates contextual phenomena which have traditionally been relegated to pragmatics, such as relativity, deixis, indexation, conventional implication and anaphoric reference, into the definitions of anchoring categories.

The semantic analysis of *-Xr*, *-DIr*, *-Iyor* and *-Ø* in Part II demonstrates how the proposed framework can be effectively used in analyzing the ranges of polysemy of TAM markers. The analysis shows that the traditional grammatical categories of 'tense', 'aspect', 'mood' and 'modality' are not indispensable, without denying their usefulness in either language-specific descriptions or cross-linguistic generalizations.

Although the polysemies of Turkish TAM markers have been addressed before in a number of studies, the analysis presented here is unprecedented in the level of detail and in the degree of explicitness. The analysis of *-Xr*, *-DIr*, *-Iyor* and *-Ø* presented here also differs from previous treatments in the following ways:

- Its results are cross-linguistically comparable, because it employs purely semantic categories defined using universally-applicable cognitive and communicative factors.
- It makes the semantic-structural relatedness between different uses of each TAM marker maximally explicit by decomposing each use into its semantic components (anchoring categories).
- It shows that none of these TAM markers can be exhaustively characterized as an 'aspect', 'tense' or 'mood' marker, since each of them is characteristically associated with semantic categories from all three of the temporal, epistemic and volitional domains.

- It identifies the main conventional uses of these TAM markers without any prejudgment as to whether they represent 'primary/core' or 'secondary/extended' meanings. It seeks the motivations for their current ranges of polysemy in the semantic changes which took place in their histories.

10.1 Avenues for further research

The semantic framework of anchoring categories can be further developed by:

- incorporating linguistic phenomena not addressed here, such as information-structural distinctions and semantic specifications in nominal reference (anchoring of entities).
- developing the proposed metalanguage of anchoring categories into a sound formal language.

The functionality of the proposed framework and the results of the semantic analysis of *-Xr*, *-DIr*, *-Iyor* and *-Ø* can be tested by further empirical studies, which may include:

- the extension of the analysis to corpus data.
- detailed semantic analyses of other TAM markers in Turkish (*-DI*/*-(y)DI*, *-mIş*/*-(y)mIş*, *-mAktA*, *-(y)AcAG* and various inflections of the auxiliary verb *ol*) in order to yield a more complete picture of the partitioning of the semantic space of TAM in Turkish.
- research with a more extensive set of diachronic data for testing the diachronic hypotheses voiced here.
- comparative and typological investigations on specific semantic fields (e.g., aspecto-temporality, evidentiality, various subfields of modality, volitional moods, etc.).

The work accomplished raises a number of interesting research topics, which include:

- the investigation of the cross-linguistic tendencies concerning the mapping of the anchoring categories onto formal categories (e.g., the extent to which the scope relations between anchoring relations determine the linearization of TAM morphemes or their modes of combination).
- the investigation of the cognitive and social factors which impose universal constraints on the structuring of the semantic space of anchoring (e.g., the role of perspectivity in constructing the social reality, restrictions of the human cognitive cognitive system, etc.).
- the study of possible psycholinguistic effects of different partitionings of the semantic space of anchoring in different grammatical systems (e.g., whether or not the grammatical distinctions in a language affect the psychological processes involved in language acquision, production or comprehension).

- the exploration of the possible uses of the metalanguage of anchoring categories in the fields of knowledge representation, automatic translation and second language learning.
- the elaboration of the implications of the proposed semantic framework for systems of logic (particularly, modal logic), epistemology and the philosophy of mind.

List of figures and tables

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