

The grammaticalization of tense and aspect

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Abstract

This chapter discusses grammaticalization paths in the field of tense and aspect from the perspective of a layered, hierarchical approach to grammatical categories, more specifically the theory of Functional Discourse Grammar. Particular attention is paid to the importance of the distinction between absolute and relative tense and between qualitative and quantitative aspect for a proper description of pathways of change.

Keywords

absolute tense, relative tense, qualitative aspect, quantitative aspect, evidentiality, grammaticalization, layering, Functional Discourse grammar

Short biography

Kees Hengeveld has been a professor of Theoretical Linguistics at the University of Amsterdam since 1996. Before that, he taught Spanish Linguistics at that same university. His research focuses on Functional Discourse Grammar and linguistic typology, and often on the combination of the two. With J. Lachlan Mackenzie he published *Functional Discourse Grammar: A Typologically-based Theory of Language Structure* (Oxford University Press, 2008). Before that, he edited Simon C. Dik's posthumous *The Theory of Functional Grammar* (Mouton de Gruyter, 1997), and authored *Non-verbal predication: Theory, Typology, Diachrony* (Mouton de Gruyter, 1992), as well as numerous articles.

Abbreviations used

1	first person
2	second person
3	third person
ABL	ablative
ABS	absolutive
ADVR	adverbializer
ANT	anterior
AUX	auxiliary
CERT	certainty
CLFR	classifier
COP	copula
DAT	dative
DEF	definite
EX	existential
F	feminine
FUT	future
HON	honorific
INDEF	indefinite
INF	infinitive
INGR	ingressive
INT	interrogative
LOC	locative
M	masculine
NONVIS	nonvisual
NR	nominalizer
PF	perfective
PL	plural
POST	posterior
PRS	present
PST	past
REFL	reflexive
REM	remote
SG	singular
VIS	visual

1. Introduction¹

This chapter considers the processes of grammaticalization that involve tense and aspect markers from the perspective of a layered, hierarchical approach to grammatical categories. After a brief introduction to the notion of hierarchical layering and the predictions that follow from it as regards grammaticalization processes in section 2, I look at grammaticalization processes leading to aspect in section 3, processes leading away from aspect in section 4, processes leading to tense in section 5, and processes leading away from tense in section 6. The chapter is rounded off with a schematic summary in section 7.

2. Grammaticalization and layering

2.1. Layering

The idea that grammatical categories are organized in layers² arose in the eighties in a variety of grammatical frameworks: in Role and Reference Grammar (Foley & Van Valin 1984), in Usage-based Grammar (Bybee 1985), in Functional Grammar (Hengeveld 1989), and in Generative Grammar³ (Pollock 1989). A major difference between these approaches is that Bybee (1985) and Hengeveld (1989) define layers in semantic terms, while Foley & Van Valin (1984) and Pollock (1989) define them in positional terms. The approaches converge in that the semantic ones predict that grammatical elements will be ordered according to their semantic scope, while the syntactic approaches start from the order and labels the resulting categories in terms of their semantics. The results arrived at through these two procedures are remarkably similar.

The basic idea may be illustrated with the following examples from Hidatsa (Matthews 1965):

- (1) Wíra i ápaari ki stao ski.
tree it grow INGR REM.PST CERT
'The tree must have begun to grow a long time ago.'

¹ I am grateful to Enoch Aboh, Peter Harder, an anonymous referee, and the participants in the Amsterdam FDG Colloquium for their comments on an earlier version of this chapter.

² For a detailed comparison between various approaches to layering see Narrog (2009).

³ The layered approach to grammatical categories in Government and Binding theory was more fully developed in the nineties as the Cartographic Approach. See Cinque & Rizzi (2010) for an overview.

In this example the relative order of the tense, mood, and aspect (TMA) markers with respect to the predicate is ingressive–remote past–certainty. Semantic approaches to layering would interpret this as a result of the fact that there are differences in scope between them: ingressive, specifying the internal temporal structure of the event, is within the scope of remote past, specifying the external temporal structure of the event. Both are in the scope of certainty, which qualifies the content of the message as a whole. These scope relations may be indicated as in (2):

(2) certainty (remote past (ingressive (predicate+arguments)))

It is not the absolute linear order but the relative order with respect to the predicate that is predicted to correlate with scopal layers. Thus, the order of the relevant TMA markers in the English translation of example (1) is the mirror–image of the one in the Hidatsa original.

Syntactic approaches would interpret the order in (2) such that the more removed a grammatical element is from the verb, the higher the corresponding functional node is in the syntactic representation of the sentence involved (see e.g. Cinque 1999).

2.2. Layering in Functional Discourse Grammar

Any prediction following from a layered approach depends on how exactly the scope relations between categories are defined. I will follow here the classification of TMA categories in terms of their scope offered in Hengeveld & Mackenzie (2008, 2010) in the context of Functional Discourse Grammar. Table 1 summarizes this classification.

Table 1. TMA categories in Functional Discourse Grammar

	<i>propositional content</i>	<i>episode</i>	<i>state-of-affairs</i>	<i>situational concept</i>	<i>property</i>
Aspect			event quantification	phasal aspect (im)perfectivity	predicate
Tense		absolute tense	relative tense		
Evidentiality	inference	deduction	event perception		
Mood	subjective modality	absolute (ir)reality	relative (ir)reality	participant-oriented modality	

Scope relations are defined here in terms of five different semantic layers. Working inside out, the predicate designates a *property* that applies to one or more participants in a state-of-affairs; the *situational concept* is a description of a set of possible states-of-affairs; a *state-of-affairs* is the situated real or hypothesized situation the speaker has in mind; the *episode* is a thematically coherent combination of states-of-affairs that are characterized by unity or continuity of time, location, and participants; the *proposition* is the mental construct entertained about a state-of-affairs.

Tense, mood, and aspect are not unified categories in their application to these layers of semantic organization, but fall into different subcategories according to their scope. Aspect is subdivided into two categories, separating quantitative aspectual distinctions (such as habitual and distributive), which quantify over states-of-affairs as a whole, from qualitative aspectual distinctions (such as imperfective and resultative), which affect the internal temporal organization of a state-of-affairs. Tense is subdivided into absolute tense distinctions (such as past and future), which locate (a series of) states-of-affairs in time with respect to the moment of speaking, and relative tense distinctions (such as anterior and posterior), which locate a single state-of-affairs in time relative to another one. Evidentiality splits up in inference distinctions (such as supposition), which indicate how the propositional content follows from the speaker's existing knowledge, deduction distinctions (such as visual evidence), which indicate how an episode can be deduced from observable facts, and event perception distinctions (such as witnessed and non-witnessed), which concern the direct perception of a state-of-affairs by the speaker. The widest range of subcategories is found in the area of Mood, where we find subjective modality distinctions (such as certainty and doubt), which indicate the speaker's attitude toward a propositional content; absolute (ir)reality distinctions (as expressed in e.g. conditions), which set a frame of interpretation for a series of states-of-affairs; relative (ir)reality distinctions

3.2. Verbal predicates

Evident lexical origins for aspectual categories are phasal verbs such as *begin* and *end* that may grammaticalize into ingressive and egressive aspect markers. A case in point is Spanish *empezar* ‘begin’, which, in combination with a verb in the infinitival form, grammaticalized into an ingressive periphrastic construction, as illustrated in the following example (Olbertz 1998: 96):⁷

- (4) Empiezan a pasar cosas.
begin-PRS.3.PL to happen-INF thing-PL
‘Things began to happen.’

The grammaticalized nature of this construction shows up in the fact that *empezar* has an inanimate subject in (4), while the lexical use of this verb requires an animate one.

A further verbal lexical origin for aspectual categories is somewhat less straightforward in that it involves the metaphorical or metonymical extension of the original meaning of the lexical verb. A well-known example of this is the prospective aspectual auxiliary *go to* in English, as in the following example from Bybee and Dahl (1989: 92):

- (5) The ladder is going to fall.

This construction will only be used, as Bybee & Dahl (1989: 92) observe, if the ladder is already in an unstable position at the reference time, so that it may be classified as a prospective construction in the use illustrated here. The grammaticalized nature of the construction shows up, among other things, in the fact that there is an inanimate subject not capable of going anywhere by itself. The prospective interpretation is a result of the metaphorical extension of the meaning of forward movement in space in the direction of an object, to the meaning of forward movement in time in the direction of an event.

Another rather typical example of aspectual categories that arise through metaphorical extension is illustrated in the ingressive periphrastic construction from Brazilian Portuguese (Marize Hattner, personal communication) illustrated in (6):

⁷ See Heine (1993: 57) for the comparable development of an egressive aspect marker in Swahili.

- (6) A máquina desatou a guspir dinheiro.
 DEF.SG.F machine break.PST.PF.3.SG to spit money
 ‘The machine (suddenly) started to spit out money.’

The momentaneous meaning of *desatar* ‘break’ in its lexical sense, which involves a sudden change of one state into another of a concrete object, is extended here to a sudden change of one state-of-affairs to another one, hence the ingressive interpretation, which can be paraphrased as “The machine broke into spitting out money”. The grammaticalized nature of the construction is evident from, among other things, the fact that there is an animate subject incompatible with the lexical interpretation of the verb.

3.3. Non-verbal predicates

Both constructions based on a primary and on a secondary non-verbal predicate may be the source of an aspectual category (see Hengeveld 1992, ch.11).

Constructions based on a primary non-verbal predicate may or may not contain a copular verb. The latter situation obtains in Turkish. Consider the following examples (Lewis 1967: 96, 159):

- (7) gel-ecek haber
 come-POST news
 ‘news to come’
- (8) Gel-eceğ=im.
 come-POST=1.SG
 ‘I am about to come.’
- (9) Güzel=im.
 beautiful=1.SG
 ‘I am beautiful.’

Turkish has a posterior participle ending in *-ecek/-eceğ*. This participle is of an adjectival nature, as shown in example (7), in which it is used attributively. The same participle may, however, also be used predicatively, as is illustrated in (8). In this case it is directly followed by an enclitic element that is used with other non-verbal predicates as well, as shown in (9), and that derives from a former inflected copula. The aspectual reading is of a prospective nature, and may be paraphrased as “I have the property (now) that I will come later”.

A slightly different strategy is exhibited by languages in which modifiers cannot be used predicatively. In these languages equative constructions may develop into aspectual constructions. Consider the following examples from Mandarin Chinese (Li & Thompson 1981: 587, 148, 590):

- (10) Tā (shì) zuótiān lái de.
 3.SG (COP) yesterday come NR
 'He arrived yesterday.'
- (11) Zhāngsān (shì) yī-ge hùshì.
 Zhangsan (COP) one-CLFR nurse
 'Zhangsan is a nurse.'
- (12) Tā zuótiān lái le.
 3.SG yesterday come PF
 'He came yesterday.'

In Mandarin Chinese the copula *shì* is used optionally with nominal predicates only. By nominalizing the clause 'he came yesterday', a nominal constituent 'one who arrived yesterday' is obtained, which is then used as a nominal predicate in (10), giving rise to a construction that is parallel to any other construction based on a nominal predicate, as a comparison of (10) and (11) shows. Sentence (10) is resultative in nature and may be paraphrased as "He is someone (now) characterized by his arriving yesterday." As noted by Li & Thompson (1981: 590), it would be an appropriate answer to the question *Why couldn't he speak English?*. Its non-resultative counterpart in (12) could be used as an answer to a question like *Has he arrived yet?*

A third construction based on a primary non-verbal predicate that may be the source of aspectual categories is the locative non-verbal predication type (Heine & Reh 1982). The shift to an aspectual interpretation arises in this case through metaphorical extension. This may be illustrated by means of the Basque examples (13) and (14) (Lafitte 1944: 263, 215), each containing the locative marker *-n* and a copula:

- (13) Etche-a-n d-a.
 house-SG-LOC 3.SG.ABS-COP.PRS
 'He is at home.'
- (14) Ibil-tze-n d-a.
 walk-INF-LOC 3.SG.ABS-COP.PRS
 'He is walking.'

The progressive interpretation of (14), which may be paraphrased as “He is in walking”, arises through the conceptualization of the subject being located within (the time span) of the state-of-affairs rather than within a concrete location (13).

In a second group of non-verbal predications that may give rise to aspectual constructions the non-verbal predicate is secondary, the main verb being one of existence or possession. An example of an existential construction developing into an aspectual construction comes from Tamil. Consider the following examples (Asher 1982: 52, 178, 40):

- (15) Kannan iru-kkar-aar-aa.
 Kannan EX-PRS-3.SG.HON-INT
 ‘Is Kannan in?’
- (16) Coll-i(y)=iru-kkar-een ...
 say-ADVR-EX-PRS-1.SG
 ‘I have said ...’
- (17) Skaatlantukku pooy-i aarjilam paticcaan.
 Scotland.DAT go-ADVR English study.PST.3.SG.M
 ‘Having gone to Scotland he studied English.’

The verb *iru* ‘to be present, to exist’ can be used as a main predicate in Tamil, as illustrated in (15). The same verb combines with an adverbial participle to form a resultative construction, as in (16). The adverbial nature of this participle is evident from its appearance in constructions such as (17). An appropriate paraphrase of the lexical origin of (16) is therefore one in which the non-verbal predicate is a secondary predicate that combines with a primary verbal predicate, as in “I exist in the circumstance of having said ...”.

Secondary non-verbal predication in combination with a lexical predicate also characterizes aspectual constructions based on a verb of possession. A common path of development is given schematically in the following series of examples:

- (18) a. I have [a read book] attribution
 b. I have [a book] [read] secondary predication
 c. I [have read] a book primary predication
- (19) a. I have [a book to read] attribution
 b. I have [a book] [to read] secondary predication
 c. I [have to read] [a book] primary predication

The participial construction *read* in (18) and the infinitival one *to read* in (19) in a first stage pass from attribution to secondary predication. In the resulting situation the combination of the temporal reference of the main clause and the anterior/posterior reference of the participle gives rise to respectively resultative and prospective meaning. In a further stage of development (see below) the possessive verb grammaticalizes and the secondary predicate becomes primary.

3.4. Some generalizations

All the constructions that may give rise to aspectual categories have in common that they are bi-predicational in nature. Each of the two predications has its own temporal orientation, generally absolute in the main predication and relative in the dependent predication. The combination of two temporal reference points then gives rise to a specific aspectual interpretation. A prospective interpretation arises from the combination of the temporal orientation of the main predication with the posterior specification of the dependent predication; a progressive interpretation from the combination of the temporal orientation of the main predication with the simultaneous specification of the dependent predication; and the resultative interpretation arises from the combination of the temporal orientation of the main predication with the anterior specification of the dependent predication. Thus the aspectual interpretations exist by virtue of a temporal clash. When the predicate of the main predication grammaticalizes into an auxiliary and the construction as a whole thus becomes mono-predicational, this effect is lost and the construction is generally reinterpreted as a (relative) temporal one. This will be the topic of section 4.4.

4. The destination of aspect

4.1. Introduction

It follows from the prediction in (3) in combination with Table 1 that aspectual categories may potentially develop into categories of (i) event quantification, (ii) event perception, and (iii) relative tense. These are frequent destinations of aspectual categories. Furthermore, relative tense categories may develop into absolute tense categories by moving up one further scopal layer.

4.2. From aspect to event quantification

As noted by Bybee & Dahl (1989), it is common for progressives to develop into more general imperfectives that can also be used to refer to habitual or repeated activities, both categories of event quantification. An example is the use of the English progressive to refer to repeated activities, as in the following example (Bybee & Dahl 1989: 82):

(20) He is working on his book every day.

This involves a change in meaning from the ongoingness of a single state-of-affairs to the ongoingness of a series of states-of-affairs. A similar situation obtains in e.g. Spanish, a language in which the past imperfective covers both types of ongoingness.

4.3. From aspect to evidentiality

A further well-attested development (Bybee & Dahl 1989: 73; Boland 2006: 190) is one in which resultative aspectual expressions evolve into expressions of event perception, an evidential category. Such a development took place in e.g. Turkish, as illustrated in the following examples (Lewis 1967):

(21) Kar yağ-tı-ø.
snow fall-VIS.PST-3.SG
'Snow has fallen' (I saw it happen)

(22) Kar yağ-mış-ø.
snow fall-NONVIS.PST-3.SG
'Snow has fallen' (I didn't see it happen)

In the past tense, Turkish makes a distinction between states-of-affairs witnessed by the speaker (21) and those not witnessed by the speaker (22). The verbal ending *-miş*⁸ used in the latter case is identical in form to the past participial ending, which does not carry evidential meaning, illustrated in (23) (Kornfilt 1997: 416).

⁸ The shape of this suffix is sensitive to vowel harmony.

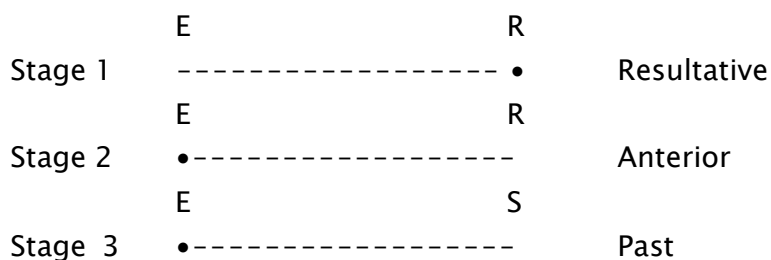
- (23) ağaç-ten yer-e düş-müş bir elma
 tree-ABL ground-DAT fall-ANT INDEF apple
 'an apple fallen from the tree to the ground'

The step from resultative (the current situation reveals a past state-of-affairs) to non-witnessed (lack of direct perception of a state-of-affairs) is not difficult to envisage.

4.4. From aspect to tense

As anticipated in section 3, aspect markers frequently develop into tense markers. On the basis of Table 1 and the general hypothesis in (3) one would expect that aspect markers develop into relative tense markers before they develop into absolute tense markers, and the available evidence suggests that this is indeed the case. The general development can be sketched as follows for three different pathways of change:

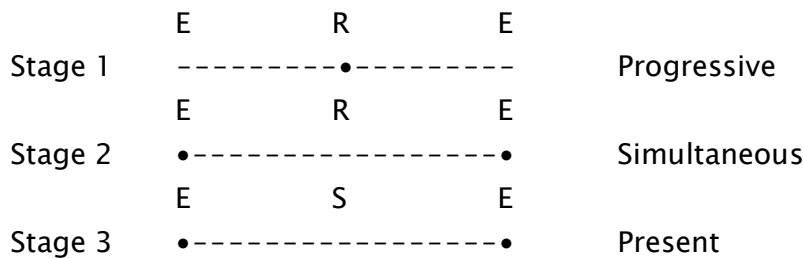
- (24) Resultative – Anterior – Past



In a resultative construction the focal point of information⁹ (●) is the state-of-affairs at reference time (R) that is the result of a previous state-of-affairs (E). An anterior relative tense interpretation arises when the focal point of information becomes the previous state-of-affairs (E) itself, seen from the perspective of the reference time (R). An absolute past tense interpretation arises when the reference time is restricted to the speech moment (S). An example of this development is Spanish *haber*, to be discussed below.

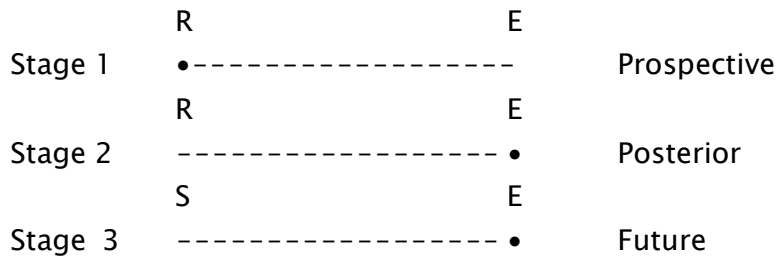
⁹ For the role of focal information in grammaticalization processes see Harder & Boye (this volume).

(25) Progressive – Simultaneous – Present



In a progressive construction the focal point of information (●) is the state-of-affairs at reference time (R) which co-occurs with another state-of-affairs (E). A simultaneous relative tense interpretation arises when the focal point of information becomes the concurrent state-of-affairs (E) itself, seen from the perspective of the reference time (R). An absolute present tense interpretation arises when the reference time is restricted to the speech moment (S). An example of this development is the English Progressive, which has reached the third phase in (25) as it expresses the non-habitual absolute present with dynamic verbs.

(26) Prospective – Posterior – Future



In a prospective construction the focal point of information (●) is the state-of-affairs at reference time (R) which precedes another state-of-affairs (E). A posterior relative tense interpretation arises when the focal point of information becomes the later state-of-affairs (E) itself, seen from the perspective of the reference time (R). An absolute present tense interpretation arises when the reference time is restricted to the speech moment (S). General evidence for this development is provided in Fleischman (1982).

To give just one example of the general development sketched here, consider the Spanish *haber* 'have' + past participle construction.¹⁰ This construction started out as a true resultative construction, in which a verb of possession cooccurred with an

¹⁰ For a detailed and insightful discussion of the history of this construction see Olbertz (1993).

adjectival participle. In present-day Spanish this construction has been replaced by the combination of *tener* ‘have, hold’ + past participle, as in (27):

- (27) Tengo prepara-d-a una cena fenomenal.
 have.PRS.1.SG prepare-ANT-F.SG INDEF.SG.F meal(F) terrific
 ‘I have a terrific meal ready (for you).’

This construction, as its predecessor, is appropriately used when the meal is actually ready, corresponding to stage 1 in (24). Note that the past participle agrees with the patient argument, thus showing the properties of a secondary non-verbal predicate (see 3.3).

The construction with *haber* then evolved into a perfect, that is, a relative anterior tense. The relative nature of the construction is evident from the fact that the construction itself can be used in all absolute tenses:

- (28) Había / he / habré preparado
 have.PST.1.SG / have.PRS.1.SG / have.FUT.1.SG prepare-ANT
 una cena fenomenal.
 INDEF.SG.F meal(F) terrific
 ‘I had/have/will have prepared a terrific meal.’

Reference is now to the anterior event that occurs previous to but within the time span defined by the absolute tense carried by the auxiliary and potential adverbial modifiers, and with current relevance at reference time, corresponding to stage 2 in (24). The past participle does not show agreement any longer but occurs in a fixed form, showing that this is no longer a case of secondary predication. The past participle is the main predicate, and the former possessive verb is auxiliariized, as is apparent, among other things, from the fact that it can be used with intransitive verbs as well.

In most Spanish dialects the construction has evolved further into an absolute tense expressing recent past. Kuteva (2001:37), citing Schwenter (1994: 93–94), provides the following examples from Alicante Spanish:

- (29) A: Cuénta=me tu día hoy.
 tell=1.SG.DAT your day today
 ‘Tell me about your day today.’
 B: Me he levanta-do a las siete.
 1.SG.REFL AUX.PRS.1.SG get.up-ANT at the seven
 ‘I got up at seven o’clock.’

Me he duchado.
 1.SG.REFL AUX.PRS.1.SG take.shower-ANT
 'I took a shower.'
 Hemos ido a-l banco para sacar dinero.
 AUX.PRS.1.PL go-ANT to-DEF.SG.M bank(m) to withdraw-INF money
 'We went to the bank to withdraw money.'
 ... etc.

This use of *haber* + participle is in competition with a simple perfective past, as reference is made to states-of-affairs that have been completed at a moment prior to the moment of speaking, corresponding to stage 3 in (24).

5. Further origins of tense

Applying the hypothesis in (3) to Table 1 again, the prediction is that potential sources for tense markers are aspect markers and markers of participant-oriented modality. The creation of tense markers from aspect markers was discussed in the previous section, so I will restrict myself to modal sources here. And indeed the development from participant-oriented modality to tense is well attested, in the sense that often the sources for posterior and future tenses are volitional or deontic modal markers, as synchronically observable in examples such as (31), taken from Bybee & Dahl (1989: 63):

(30) It looks like it wants to rain.

Fleischman (1982) shows for Romance and English that in this development the erstwhile modal expression, as predicted by the hypothesis, first acquires a (relative) posterior meaning, before acquiring an (absolute) future meaning.

6. The destination of tense

To round off the picture, let me briefly consider the potential destinations of tense markers according to the hypothesis in (3). As Table 1 shows, these are inferential evidentiality and subjective modality. Data from few languages are available to verify whether this development is a general one, but the data that are available indicate that this is indeed a possible pathway. A well-known development is from future tense to supposition (Fleischman 1982), a form of inference, as in (32):

(31) He will be in Paris by now.

7. Summary

Table 2 summarizes the paths of grammaticalization involving tense and aspect that have been discussed in the previous sections.¹¹

Table 2. Attested developments in the grammaticalization of tense and aspect

	<i>propositional content</i>	<i>episode</i>	<i>state-of-affairs</i>	<i>situational concept</i>	
Aspect			event quantification	phasal aspect (im)perfectivity	predicate
Tense		absolute tense	relative tense		
Evidentiality	inference		event perception		
Mood	subjective modality	absolute (ir)reality	relative (ir)reality	participant-oriented modality	

The overall conclusion that may be drawn is that developments in the domain of tense and aspect may be fruitfully interpreted in terms of scope increase along hierarchically organized layers of semantic organization.

¹¹ Further pathways may be attested, but these involve modal categories not dealt with in the current chapter.

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