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Questa rivista adotta un sistema di double blind peer review.

Direttore responsabile
Letizia Lucarini

Rivista quadrimestrale
Anno II n. 6-2018

In copertina: Satiro di Mazara del Vallo,
Museo del satiro danzante
di Mazara del Vallo.

n. 6-2018

La distanza dei classici

a cura di Roberto Nicolai

Meaningful Grammar

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Abstract

Grammatical structure is meaningful in at least three respects: It is symbolic as a pairing of form and meaning, it is to a large part motivated, and it invites implicatures. These meaningful aspects of grammar relate to the language users' cognitive abilities. The cognitive underpinning of language is demonstrated in the areas of time/tense and modality.

Notions of time are in English expressed lexically, grammatically, and lexico-grammatically as in the be going to*-Future. The development of the* be going to*-construction to become a future marker is motivated by implicature and conceptual metonymy, and its present-day grammatical usages relate to its lexical basis by conceptual metaphor.*

Notions of modality are typically expressed by modal verbs, and the same modals are used to express different kinds of modality. Epistemic and deontic modality and share the property of force dynamics: Deontic modality as in You must go *involves a socio-physical force while epistemic modality as in* It must be true *involves the mental force of reasoning. A commonality shared by all types of modality is that the conceptualizer does not accept the situation referred to as real and strives to bring its potential realization under control.*

Grammatical units tend to be polysemous. Polysemy is, however, tolerated when the meanings of the linguistic sign are conceptually connected and relatable to a common, higher-level meaning.

Keywords: English; Grammar; Motivation; Implicature; Time; Modality.

1. By way of introduction

We all agree that the function of language is to communicate meaning. As aptly phrased by Roman Jakobson, one of the pioneers of twentieth century linguistics, «language without meaning is meaningless». But which part of language is meaningful? We mostly think of words as the meaningful units of language. We are much less likely to associate grammar with meaning. This paper is meant to show that grammar is meaningful as well — and rebut the widely held belief that grammar is no more than a set of formal rules. Let us consider three aspects of grammar that demonstrate its meaningfulness.

1.1 Grammatical structure is meaningful

Like lexical items, grammatical units are **symbolic** as a pairing of form and meaning. It can easily be shown that grammatical constructions are meaningful. Let us consider the so-called caused-motion construction, as in *Fred threw the letter into the wastebasket*. The predicate (*throw*) of the sentence has three arguments: a subject (*Fred*), a direct object (*the letter*), and a directional adjunct (*into the wastebasket*). The meaning of this sentence can be paraphrased as 'Fred *caused* the letter to *move* into the wastebasket' — hence the term caused-motion construction. In her construction-grammar approach, Adele Goldberg (1995: 152-179) demonstrated that the caused-motion construction is also used with verbs that do not normally take three arguments, as illustrated in the sentences under (1).

(1a) Fred kicked the dog into the bathroom.
(1b) Fred sneezed the tissue off the table.

In sentence (1a), the verb *kick* is used in the caused-motion construction. *Kick* is a transitive verb that normally only takes two arguments, as in *Sam kicked the ball*. An act of kicking affects an object, but it does not bring about any change: The ball does not burst or fly away. *Kick* is thus normally not used in a causative sense and simply means 'hit something with one's foot'. In sentence (1a), however, the number of arguments of *kick* is increased by a third argument: *into the bathroom*. The meaning of *kick* has also changed, too: It now means 'one's hitting with one's foot causes a thing to move to a place'.

Sentence (1b) demonstrates an even more radical impact of the caused-motion construction. Here, the caused-motion construction applies to an intransitive verb. The verb *sneeze* normally denotes a process that only involves one argument, the sneezing person. In the caused-motion construction, however, it has three arguments, and the meaning imposed by the construction can be described as 'one's sneezing causes a thing to move to a place'. An interesting side effect is that can be used with one or three arguments, but not as a transitive verb with two arguments, i.e. we can't say **Fred sneezed the tissue*.

These examples clearly show that grammatical constructions have meaning of their own independently of the lexical items used in them. When, as in these sentences, the meanings conveyed by the lexical words and the grammatical construction are in conflict, grammar normally wins out and coerces an interpretation that is in line with its grammatical construction.

1.2 Grammatical structure is motivated

Most words are arbitrary, i.e. there is no motivated connection between the form of a word and its meaning. Grammatical constructions, on the other hand, are to a large part motivated. A convincing example of motivation in language is iconicity, i.e. the conceived similarity between a form of a sign and its meaning. Consider the following instances of word order: the order of the clauses in (2a) and the order of the adjectives in (2b):

(2a) Silvia had a baby and got married.
(2b) It is a cute little Italian boy.

The order of the coordinated clauses in (2a) reflects the order in which the two events occurred: Silvia first had a baby and then got married, possibly as a result of having a baby. If we reversed the order of the clauses, i.e. as *Silvia got married and had a baby*, its meaning would change, too: Silvia first got married and then had a baby. Both interpretations are due to the iconic principle of **temporal order**. The sequential order in which coordinated sentences are presented is thus meaningful—it is, in fact, so self-evident that we don't give it any thought.

Let us now consider the order of the attributive adjectives in (2b). The order of the three adjectives sounds natural and cannot really be

changed: *It is a little cute Italian boy* sounds unusual, and *It is an Italian cute little boy* sounds peculiar. Apparently, the position of attributive adjectives relative to each other is determined by their semantics. *Italian* denotes a permanent property of the boy, *little* denotes a stable or temporary property, and *cute* denotes an evaluative property ascribed to the child. Permanent properties inherently belong to the entity described by the noun and adjectives denoting a permanent property are, therefore, put closest to the noun. Temporary properties are accidental properties of an entity and adjectives denoting these properties are put further away from the noun. Evaluative properties are based on the speaker's subjective assessment and hence external to the entity they qualify. These adjectives are, therefore, put furthest away from the noun. The order of attributive adjectives in English is thus also motivated by an iconic principle: the principle of **proximity/distance**, according to which conceptual distance corresponds to linguistic distance.

1.3 Grammatical structure invites implicatures

Implicatures are implicit aspects of meaning which the hearer supplies in interpreting an utterance the way it was intended by the speaker. Thus, the two coordinated clauses in (2a), *Silvia had a baby and got married*, tend to invite more than purely temporal meaning. As already mentioned above, we might also see a causal connection between the clauses: 'Silvia had a baby and, *therefore*, she got married'. Such implicatures are usually accurate but may, of course, also be mistaken. We may, therefore, reject an implicature. I could, for example, say, "Mary had a baby and got married, but not because of the baby." The possibility of cancelling an implicature is, in fact, the defining characteristic of implicatures.

The hearer usually reads more information into an utterance than what is literally expressed by the speaker. Why would language users do so? Communication is, amongst other things, governed by the principle of economy: «Say no more than you must» (Grice 1975).The speaker need not express information that she assumes the hearer can supply anyway from the preceding discourse, the situational context or their world knowledge. Since a speaker may rely on the hearer's ability to infer missing information, language tends to underspecify meaning. Let us consider the implicated meanings invited in the following sentences.

(3a) Felix slapped a mosquito. ('Felix killed a mosquito')
(3b) Felix slapped at a mosquito. ('Felix missed a mosquito')

The sentences under (3) are identical apart from the preposition *at* in (3b). Why should these sentences evoke such different interpretations? The striking difference in meaning between the sentences cannot be due to the lexical meaning of the preposition *at* but arises from the different constructions. Sentence (3a) is a transitive construction with a subject and a direct object. A property of transitive constructions with agents is that their action affects the thing denoted by the direct object. The transitive sentence thus conveys that Felix's slapping affected the mosquito and invites the implicature that Felix succeeded in killing the insect. This inferred interpretation of 'killing' is jointly triggered by the transitive construction and our world knowledge about slapping mosquitoes. We "know" that mosquitoes are nasty insects and people try to kill them by slapping them.

Sentence (3b) is an intransitive construction with a prepositional adjunct. The adjunct *at a mosquito* denotes the target of an act of slapping. The speaker obviously intended to express more than the fact that Felix slapped at a mosquito, and it is up to the hearer to infer the missing information. The grammatical construction conveys that the entity expressed as a target was not affected by the action denoted by the verb. The meaning that the speaker apparently intended to convey is that Felix wanted to kill the mosquito by slapping it but he missed it and the mosquito flew away.

Inferential reasoning is, amongst others, guided by our knowledge of frames. **Frames** are packages of knowledge about a coherent segment of experience. We have a frame of nasty insects that sting us and suck our blood, and when we hear the word *mosquito* it automatically triggers the blood-sucking frame. But not everybody shares the same frame. The episode of Felix and his slapping a mosquito develops further.[15] His son, surprised at the blood he noticed on his father's arm, says: «Wow, dad, that mosquito had a lot of blood in him.» His father responds: «That's

[15] Found on: https://cloudfront.crimethinc.com/pdfs/rolling_thunder_7.pdf [16.04.2018].

not his blood, son. That's my blood». The misunderstanding between father and son was due to the different frames evoked. The son did not yet have the blood-sucking frame of mosquitoes like his father and hence arrived at the interpretation that it was the animal's blood. This little story nicely illustrates the power of frames in constructing the meaning of utterances, and it also reveals that meanings are not fixed but develop in the discourse.

The three aspects of meaningful grammar outlined above share one important aspect: They all relate to the language users' cognitive abilities. Language users need to be aware of the connection between a grammatical form and its meaning(s) and solve potential conflicts between lexical and grammatical meanings, they need to relate grammatical structure to other domains such as perception, and they need to supply missing information to an utterance in order to reconstruct the speaker's intended meaning.

In view of the substantial role played by cognition in language it stands to reason that grammar should be regarded as a cognitive achievement. At the heart of the cognitive view of language are human beings, who are equipped with mental and perceptual faculties, who have emotions, bodily experiences and the power of imagination, and, most importantly, who have had the ability to develop language as the most efficient means of communicating meaning. In what follows we will illustrate the cognitive under pinning of language in two closely related areas: time/tense and modality.

2. Time and tense in English

2.1. Lexicon-grammar continuum

There is no sharp dividing line between the lexicon and grammar — they much rather form a continuum. Let us consider the italicized notions of time in the sentences below:

Lexical forms:
(4a) I teach *every day.*
(4b) I teach *from 8am to 12am.*

Grammatical forms:
(4c) I *teach* English to international students.
(4d) I *taught* Spanish to 3–6 year olds.

Lexico-grammatical forms:
(4e) I *will* teach square dancing this year.
(4f) I *am going to* miss my teacher.

The notions of time in sentences (4a) and (4b) are expressed as lexical forms. The expressions *every day* and *from 8am to 12am* provide specific information about the days and hours when the situation described occurs. Due to the Simple Present, the time expressions in these sentences refer to habitual occurrences of a situation.

The notions of time in sentences (4c) and (4d) are expressed grammatically as tenses: The Present and Past Tenses in English are formed morphologically: The Present Tense is marked by the third person singular *-s*, and the Past Tense is marked by the suffix *-ed*. As grammatical forms, tenses provide highly general temporal information: The Present Tense in (4c) indicates that I teach English habitually but it doesn't inform us about the time when I started teaching, how often I teach, if I am teaching now, etc. The Past Tense in (4d) indicates that I taught Spanish at some time before the present moment but it does not inform us about the time when the situation began, when it ended, and how long it lasted.

The notions of future time in sentences (4e) and (4f) are expressed by lexico-grammatical forms. The lexical origins of *will* and *be going to* can still be recognized, but their function as future markers is clearly grammatical. Other languages such as Latin also use a grammatical form for all its tenses, including the future. Thus, *I will teach* translates in Latin as *docebo*, where the suffix *-b(i)* indicates future time. The Latin formation of the future is motivated by the overall morphological paradigm of tenses.

English has a mixed pattern of tenses. The Present and Past Tenses are formed morphologically, but the Future Tense is formed lexico-grammatically. This has led some grammarians to claim that English has only two tenses: the Present and the Past. This decision, of course, depends on one's definition of tense. A greater challenge

would be to ask *why* the English Present and Past Tenses are formed differently than the Future Tense.

Let us consider this issue from the point of view of the times denoted by the tenses. Times normally relate to situations, and situations are associated with notions of reality. The present, the past and the future are associated with different kinds of reality, as shown in Figure 1. The arrows indicate the flow of time from the past to the future and their evolving realities. The model of evolving reality has been adopted from Langacker (1991) and is discussed in Radden/Dirven (2007: 172).

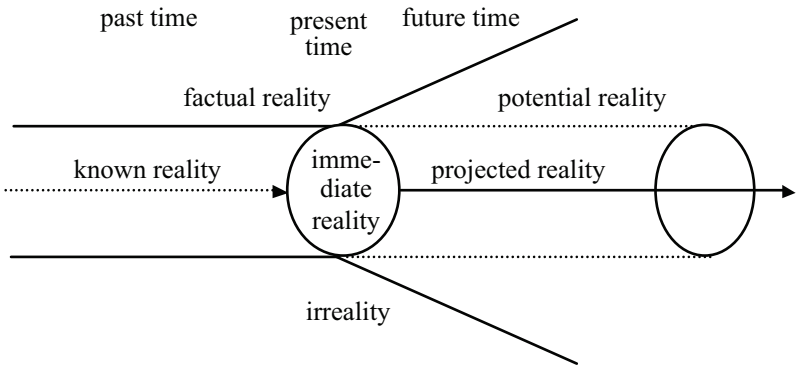

Figure 1: Model of evolving reality.

Past situations are remembered and hence belong to known reality. Present situations are currently experienced and hence belong to immediate reality. Both past and present situations are thus seen as part of factual reality. They therefore lend themselves to being grammatically coded by one form: either the Past Tense or the Present Tense. The Past Tense locates a situation in the past time sphere and the Present Tense locates a situation in the present time sphere. The Present and Past Tenses are **absolute tenses** in the sense that the times they refer to are (absolutely) defined by the moment of speaking: The past is the time sphere before speech time and the present is the time sphere at speech time.

Future situations only have projected reality. As indicated by the arrow in the cylinder of Figure 1, we think of reality as evolving

from the past to the present and continuing in a similar way into the future. When we are certain that a future situation will occur, we give expression to our certainty by using the Future expression *will*. Meteorologists, for instance, can reliably predict the weather on the basis of past and current weather developments and hence can confidently announce: «We will have two days of sunshine». We tend to interpret situations described in the *will*-Future as predicted with certainty. This also applies to sentence (4e), *I will teach square dancing this year*, which we understand to mean that my course on square dancing has been firmly scheduled. The *will*-Future can thus be seen as an absolute Future Tense comparable to the Present and Past Tenses.

Our daily expectations about the future, however, are not seen as absolute but much rather as relative to another unit of time. Thus, sentence (4f), *I am going to miss my teacher*, describes my present worries about my future feelings. Our focus is on the present time, which serves as the point of orientation from where we take a forward-looking, or prospective, stance. The tense form referring to this constellation is known as **Present Prospective**. We may also adopt a past or, more rarely, a future point of orientation and take a prospective stance from there. Thus, we have both *I was going to miss my teacher* and *I will be going to miss my teacher*. The latter situation is hard, but not impossible, to imagine: 'Some time in the future, my teacher will leave, and when she is gone, I will be going to miss her'. Note that we cannot use a past or future point of orientation with the absolute *will*-Future. (*I would miss my teacher* does not describe a past, but a hypothetical, situation.) Note also that we can be mistaken about a prospective outcome. Consider the following situations in the **Past Prospective**, where an expected future situation did not come about.

(5a) I thought I was going to miss my teacher but my new teacher turned out to be much better.
(5b) The car was going to swerve off the road but I jerked the steering wheel to the side.

In both sentences, the first clause invites the implicature that the future situation would occur: I would miss my teacher and the car would veer off the road. The *but*-clauses, however, cancel these im-

plicatures: I did not miss my old teacher and the car safely stayed on the road. Prospective tenses such as the *be going to*-Future are thus clearly different in meaning from the absolute *will*-Future. They are, therefore, often also distinguished terminologically as futurates. **Futurate** forms focus on the source on which our expectation about the future is based, in particular intention, volition, indication or arrangement. English has quite a few futurate forms, some of which are listed in Table 1.

Futurate forms	**Future meanings**	**Examples**
be going to	intentional, indicative	*It's going to rain.*
be about to/on the point of	imminent	*I am about to leave.*
be on the brink/on the verge of	immediate and disastrous	*I am on the verge of collapse.*
Present Progressive	arranged	*I am getting married.*
Simple Present	scheduled	*Doors open at 6 p.m.*

Table 1: Futurate forms and their meanings.

The futurate forms listed above are far from forming a homogeneous class. The first three types have a lexical basis, the latter two are grammatical forms. In the group of lexical expressions, *be going to* describes an event and is in the progressive, while *be about to* and *be on the brink of* describe a state and are in the non-progressive. Likewise, one of the grammatical forms is in the progressive and the other one in the non-progressive.

The diversity of prospective expressions reveals that the future is not on a par with the present and the past. In English, the distinction between factual reality and projected reality is crucial. Possibly, languages that lack a morphological Future Tense like English are richer in futurate expressions. The futurate forms do not just happen to be there but reflect people's communicative needs. People want to be able to inform the hearer about the source on which their expectation is based. They have introduced these forms at some time in the past and we can still assume that their choice of expressions was motivated. The following section will examine one of these forms more closely: the widely used *be going* to-Future.

2.2 The be going to-*Future*

In present-day English, the periphrastic *be going to*-construction has two usages: as an intentional future, as in *I am going to eat*, and as an conclusive future, as in *There is going to be trouble*. The development and usages of these two senses of the *be going to*-Future pose a number of challenges: (i) How are these senses related to the original spatial sense of *go*? (ii) How are the two senses related to each other in present-day English? (iii) How is the complex form *be going to* motivated as a tense marker? We will look at these issues in turn.

(i) The use of the *be going to*-construction as a future marker is the result of grammaticalization. In the process of their **grammaticalization**, words tend to undergo changes in form and/or meaning. With respect to its form, Futurate /gəʊɪŋ tu:/ is normally unstressed and, unlike the lexical expression, may be contracted to /gɒnə/. With respect to its meaning, the *be going to*-construction underwent several stages of development from its original sense of movement to the two future senses. These changes in meaning are illustrated in the sentences below (adopted from Heine/Claudi/Hünnemeyer 1991: 70ff):

(6a) Henry is going to town.	
= **movement**	A
(6b) Are you going to the library?	
= movement, implied intention	A(B)
(6c) No, I am going to eat.	
= (possibly movement), **intention**	(A)B
(6d) I am going to make you happy.	
= intention, implied prediction	B(C)
(6e) It is going to be fun.	
= conclusive **prediction.**	C

Sentence (6a) indicates the basic sense of *go*: 'movement', here referred to as sense 'A'. When we go to a place, we normally do so with the purpose of doing something there. Sentence (6b) thus invites the implicature that I am going to the library in order to study there, i.e. sense 'A(B)', where the intention 'B' is optional.

In sentence (6c), the focus shifts from the movement part to the intended future action. This is the sense 'B' of the intentional *be going to*-Future, where the aspect of movement may be completely gone. This shift in focus is motivated by metonymy. In **metonymy**, two concepts are closely associated so that the mention of one of these concepts, the source, evokes the other concept, the target, which becomes more salient. We, therefore, understand *going to the library* metonymically to mean 'studying at the library'. The metonymy is conceptual in nature because it applies to an open range of situations: *going to bed* means 'go to sleep' and *going to the bathroom*, of course, means more than just going there. The underlying conceptual metonymy can be stated as MOVEMENT TO A GOAL STANDS FOR ACTION PERFORMED AT THE GOAL.

In sentence (6d), my intention to make a person happy invites the metonymic implicature that this will also happen, probably because certain indications allow me to predict this outcome. For example, I know that my presence always gives her a smile.

Sentence (6e), finally, no longer involves intention and is understood in sense 'C', i.e. the sense of 'prediction based on indications', or simply 'conclusive future', as in *The party is going to be fun because all of us will be dressed up*.

The development of the 'movement' sense of *be going to* to 'intention' and 'prediction' is, in fact, consistent with a general tendency of shifts from concrete meanings to abstract meanings.

(ii) This far we have looked at the historical developments leading to the two senses of the *be going to*-Future. Present-day language users are, of course, not aware of these developments. Most speakers are probably not even aware of the fact that there are two senses: To them, the *be going to*-construction has just one future meaning. If we want to model the native speakers' linguistic intuition, we need to search for a commonality shared by both future meanings. We may reasonably surmise that the shared meaning is that of a 'causal situation implying a future outcome'. Both the intentional future and the conclusive future can now be subsumed under this abstract characterization, as shown in Table 2.

Common Meaning	Causal Situation	Implicature	Future outcome
intentional future	intention	anticipation	action
conclusive future	indication	conclusion	result

Table 2: Common and particular meanings of the *be going to*-Future.

The intentional future is causal in that a person has the intention of doing something in the future, and the speaker may confidently anticipate the person's action as the future outcome. The conclusive future is causal in that certain circumstances, according to the speaker's reasoning, indicate a more or less predictable result as the future outcome. Thus, when we see dark clouds gathering in the sky towards us, we conclude that it is *going to* rain soon. The intentional future and the conclusive future thus share the same abstract conceptual structure and hence are not felt to be different.

(iii) Let us now consider the motivation of the use of the *be going to*-construction as a future marker. Firstly, the idea of movement is still present in its temporal meaning, albeit in a metaphorical sense. We understand reasoning metaphorically in terms of moving, and drawing inferences is, of course, a kind of reasoning. We find this metaphor reflected in expressions such as *come to a conclusion*, *follow a train of thought* or *an idea came to my mind*. The *be going to*-construction is thus also motivated by the **conceptual metaphor** THINKING IS MOTION.

Secondly, the progressive aspect in *be going to* focuses on the ongoingness of an event. In analogy to physical motion to a goal, we see ourselves moving on the time line towards a future goal that, however, has not been reached yet. This grammatical structure thus perfectly matches the notion of an implied outcome and hence also motivates its future sense.

The *be going to*-construction is thus well motivated as a futurate tense, not only in its metonymic step-by-step derivation from movement, but also in its present-day metaphoric understanding and its grammatical form of progressive aspect. The particular senses are also motivated. Intentions are formed in the present and are oriented towards the immediate future. Likewise, indications draw our attention to things that are going to happen as a result, and

these normally occur in the immediate future. Events expressed by the *be going to*-Future are, therefore, expected to come to pass in the immediate future.

3. Modality and modal verbs

Grammarians and logicians distinguish different kinds of modality. We will first look at epistemic and non-epistemic modalities and then discuss the puzzling issue of why the same modal verbs are used to express different kinds of modality, not just in English but in many other languages as well.

3.1. Epistemic modality

The model of evolving reality sketched in Figure 1 includes one more type of reality that has not been touched upon this far: potential reality. Potential reality belongs to the domain of modality. Like future reality, potential reality is not factual. But whereas future situations are expected to come to pass, the situations described as modal are seen as uncertain: they may or may not occur. **Modality** is concerned with the notions of necessity and possibility, as in *This may be true* and *This must be true*. Put simply, "modality refers to the area of meaning that lies between yes and no – the intermediate ground between positive and negative polarity"(Halliday 1994: 356). The intermediate ground covers a range of values from low to high probability, as illustrated in Table 3. Here, the positive and negative poles are represented by categorical assertions, and the intermediate range of modality is represented by three modal verbs.

Modality				
	low	median	high	
negative assertion	possibility		necessity	positive assertion
It is not true.	*It may be true.*	*It will be true.*	*It must be true.*	*It is true.*

Table 3: Range of epistemic modality between 'negative assertion' and 'positive assertion'.

The above example illustrates epistemic modality. **Epistemic modality** (from Greek *episteme* 'knowledge') is concerned with the speaker's estimation of the factuality of a state of affairs. Contrary to the original meaning of the term, epistemic modals are thus used when the speaker lacks, rather than has, sufficient knowledge about something. English has at its disposal a variety of expressions that allow the speaker to verbalize shades of epistemic assessments, often combined with beliefs, opinions, assumptions, guesses, convictions, etc. Expressions of epistemic modality are not restricted to modal verbs but found in all open word classes:

(7)
modal verbs: *must*, *ought*, *should*, *can*, *could*, *may*, *might*, *will*,*would*
lexical verbs: *it seems*, *appears*; *I think*, *believe*, *doubt*, *assume*, etc.
adverbs: *necessarily*, *certainly*, *probably*, *possibly*, *perhaps*, *hardly*, etc.
adjectives: *it is apparent*, *clear*, *evident*, *possible*, *likely*, *doubtful*, etc.
nouns: *there is a chance*, *possibility*, *likelihood*, *no doubt*, etc.

Modal verbs form a unique class of verbs: The speaker making an assessment is not overtly mentioned—technically, the speaker is "offstage". Conceptually, however, the speaker is present as a participant of the scene. Thus, *It must be true* means as much as 'I, the speaker, conclude that this is necessarily true'. The fact that the speaker is suppressed has the possibly unexpected effect that the modal assessment is highly subjective, i.e. it expresses the speaker's personal estimation of a state of affairs. This mainly applies to the modal verbs *may* and *must*. The majority of epistemic expressions, however, present the speaker's assessment more objectively. We can see this from their grammatical behavior.

Subjective epistemic assessments are only made at the present moment, but objective ones can also be made in the past or the future.

(8a) Dogs may be smarter than humans.
(8b) I believe/believed/am going to believe that dogs are smarter than humans.

The modal verb *may* can only be used in the Present Tense, as in (8a). The form *might* does not refer to past time but has the effect making the assessment sound more tentative. We may use a subjective modal verb to assess past or future situations, but we always do so at the present moment. Thus, the sentence *Dogs may have been smarter than humans* describes a present assessment about a past situation and, likewise, *Dogs may be going to be smarter than humans* describes a present assessment about a future situation. As shown in sentence (8b), assessments made by lexical verbs are not tied to the present moment. They are thus less subjective.

Let us now look at a more intricate piece of evidence: the use of tag questions. Tag questions are used when we ask the hearer to confirm something we just said. Consider the tag questions in the following sentences:

(9a) *Dogs *may* be smarter than humans, aren't they?
(9b) *I believe* that dogs are smarter than humans, aren't they?
(9c) Dogs are *clearly* smarter than humans, aren't they?

Sentence (9a) with the subjective modal *may* is not compatible with tag questions. Its ungrammaticality is due to the "offstage" position of the speaker coupled with the maximally subjective assessment imposed by *may*. The hearer can, of course, not know the "hidden" speaker's innermost thoughts.

Sentence (9b) with the lexical verb *believe* still sounds odd but better than the preceding sentence. Here, the speaker is "onstage" as a participant of the main clause, and the object of his belief is expressed in the subordinate clause. Since the content of the assessment is grammatically separated from the speaker, it has a certain degree of independence and may, in accordance with the iconic principle of proximity/distance, be referred to and confirmed by the hearer. This explains why naming the speaker makes an epistemic assessment sound less subjective than suppressing the speaker.

In sentence (9c), the speaker's assessment is evoked by the modal adverb *clearly*. However, the speaker is neither onstage nor offstage and hence is completely backgrounded so that the assessment sounds objective: The speaker appears to echo a generally held public opinion.

The modal expressions listed under (7) already provide the speaker with a wealth of choices to frame their assessment either subjectively or objectively. There are also virtually unlimited possibilities of forming complex epistemic expressions. Halliday (1994) lists some such epistemic expressions, all of which mean 'I believe':

(10a) Everyone admits that…; All authorities on the subject are agreed that…; No one person would pretend that
(10b) It stands to reason that…; Commonsense determines that…; It would be foolish to deny that…

The expressions under (10a) are generalizations. An assessment is, of course, made and communicated by an individual person. Since the speaker who makes the assessment is also included in the overall set, the generalized expressions make perfect sense. These expressions can be seen as instances of the conceptual metonymy GENERAL FOR SPECIFIC, which accounts for the use of *everyone* for 'I'

The expressions under (10b) refer to reasoning. Their use also makes sense because epistemic assessments are based on conclusions arrived at by one's reasoning. The usages are based on the metonymy REASON FOR CONCLUSION, which accounts for *it stands to reason* for 'I conclude'. All these expressions give an objective view of an assessment and are, therefore, mainly found in formal and academic discourse.

3.2 Non-epistemic modalities

Non-epistemic modality is often referred to as **root modality** because it is historically and conceptually more basic than epistemic modality. Root modality is difficult to define, mainly due to its disparate subtypes. The following three subtypes of root modality can be distinguished.

(11a) Deontic modality
Permission: *You can go home now.*
Obligation: *You must go home now.*
(11b) Intrinsic modality
Intrinsic possibility: *You can be charming.*
Intrinsic necessity: *You must be careful.*

(11c) Disposition modality
Ability, Capability: *I can speak five languages.*

Deontic modality is concerned with the speaker's directive attitude towards an action to be carried out. Deontic modality thus belongs to the world of social interaction and authority. Like epistemic modality, deontic modality covers the intermediate ground between the poles of request and prohibition, or *Do it!* and *Don't do it!* Like these imperatives, expressions of deontic modality have the force of a directive speech act.

Modality				
	low	median	high	
prohibition	permission		obligation	order
Don't go!	*You can go.*	*You should go.*	*You must go.*	*Go!*

Table 4: Range of deontic modality between 'prohibition' and 'order'.

Deontic modality is about events and not, like epistemic modality, about states of affairs. This has consequences for the modal force and the subjectivity or objectivity of modality.

Firstly, the strength of deontic permissions and obligations is felt to be much stronger than the strength of epistemic possibilities and necessities. Assessing a possibility or necessity may only affect the hearer's belief system, but granting permission or imposing an obligation strongly affects people. Consider the use of the intensifying adverbial *absolutely* in the following sentences.

(12a) The kids must (*absolutely) be in bed now.
[epistemic necessity]
(12b) The kids must (absolutely) go to bed now.
[deontic obligation]
(12c) The kids must (absolutely) be in bed by ten o'clock.
[deontic obligation]

The adverbial *absolutely* cannot be combined with an epistemic assessment of a state, as in sentence (12a), but is compatible with an obliga-

tion to act, as in (12b). Sentence (12c) literally describes the same state as sentence (12a) and, therefore, should be incompatible with the adverbial *absolutely*, but it is not. Its acceptability can be explained by the presence of the time expression *by ten o'clock*, which sets an endpoint by which a situation must be completed. States do not have set endpoints, so we must be dealing with an event preceding the state (of being in bed). We therefore understand the sentence metonymically in the sense of performing an action in order to achieve the state, i.e. 'to go to bed'. In its metonymic sense of obligation, the deontic attitude thus allows the sentence to be intensified by *absolutely*.

Secondly, the distinction between subjective and objective modality is more pronounced in deontic modality than in epistemic modality. *May* and *must* are subjective modals, *can* and *have (got) to* are objective modals. The epistemic difference between *This must be true* and *This has to be true* may be negligible, but the deontic difference between *You must pay the bill* and *You have to pay the bill* can be very significant in social interaction. With deontic *must*, an obligation is laid upon you by the speaker, with deontic *have to*, the obligation comes from external circumstances and the speaker is no longer felt to be responsible. We hate to be bossed around by other people but are willing to accept rules and regulations. It doesn't come as a surprise, therefore, that the use of deontic, but not epistemic, *must* has dramatically decreased in recent times. In American English, *must* has almost completely been ousted by *(have) got to* and *have to,* a shift that has been attributed to democratization and colloquialization (Myhill 1996, Collins 2005).These developments might well be the result of people's increased awareness of the fact that language does not exist in a vacuum.

Intrinsic modality is concerned with potentialities arising from intrinsic qualities of an entity. There are only two poles of intrinsic modality: intrinsic possibility and intrinsic necessity. Intrinsic possibility and necessity can be distinguished from epistemic possibility and necessity by using paraphrases that focus on the entity in intrinsic modality and on the state of affairs in epistemic modality:

(13a) My cat *can* be a real nuisance.
'It is possible for my cat to be a real nuisance'.
[intrinsic possibility]

(13b) My cat *may* be a real nuisance.
'It is possibly the case that my cat is a real nuisance'.
[epistemic possibility]
(13c) My husband *must* be rich.
'It is necessary for the man I marry to be rich'.
[intrinsic necessity]
'It is necessarily the case that my husband is rich'.
[epistemic necessity]

The use of *can* in sentence (13a) signals intrinsic possibility because my cat has a particular intrinsic quality. It has been a nuisance before and can, therefore, potentially be a nuisance again. The use of *may* in (13b) signals epistemic possibility because the state assessed by the speaker is uncertain. To the speaker's knowledge, the cat has never been a nuisance and may never be one. Note also that *can*, due to its factuality, is unstressed while *may* could be stressed and have a fall-rise intonation contour, thus reflecting the speaker's thought given to the assessment.

Both intrinsic necessity and epistemic necessity are expressed by *must*. Sentence (13c) can, therefore, be interpreted in two ways. In its intrinsic interpretation, it refers to a man that needs to have the quality of being rich in order to qualify as a prospective husband; in its epistemic interpretation, the sentence refers to the speaker's present husband who, according to her deductive reasoning, is rich.

Disposition modality, in particular ability, is concerned with a person's or thing's intrinsic potential of being actualized. Disposition modality is thus closely related to intrinsic modality, and both are sometimes subsumed under "dynamic modality", which is a misnomer because these modalities are no more dynamic than root modality. Dispositions may only lead to possible, not necessary, actualizations. They are, therefore, only expressed by *can*. Thus, we can dance, can swim, can play the piano, and can run a marathon.

3.3 Coherence of modality

We have distinguished four types of modality: epistemic modality, deontic modality, intrinsic modality and disposition modality. Their usages differ substantially from one another, involving the distinctly different notions of assessment, directive attitude, potentiality and ability. As in

the discussion of the *going to*-Future in Section 2.3, we want to go beyond a purely descriptive analysis. In particular, we will try to answer the questions: (i) What role do modal verbs have in modality? (ii) How are the modal senses related and motivated?

(i) All four types of modality share the property of being expressed as modal verbs. Notions of modality can, as has been shown for epistemic modality, be expressed by a variety of lexical items of different word classes, but modal verbs are expressions of modality par excellence: They are, in fact, only used to express modality and might even be said to be the unifying feature of modality. Let usbriefly look at the core modal verbs.

The modals *may*, *can*, *must*, *should*, *ought*, *will*, *shall* are characterized by certain "defective" properties: lack of non-finite forms (infinitive, gerund, present and past participles); lack of3rd person singular *-s* inflection; lack of Past Tense forms or use of them as distal markers (*might*, *could*); no use as main verb; no co-occurrence with other modal verbs. These "defects" of modal verbs are vestiges of their older stages as preterite present verbs, but these "irregularities" have become markers of their grammatical function in present-day English. Modals lack non-finite forms because the speaker's assessment or attitude pertains to the message as a whole, they lack the 3rd person singular *-s* because the verb agrees with the unnamed speaker, i.e. the 1st person singular *I*, they lack Past Tense forms because the speaker's contribution occurs at the present moment. These unique properties characterize modal verbs formally as grammatical markers.

Let us compare the usages of the enabling modals *can* and *may* and the compelling modals *must* and *have to* in the four types of modality. In Table 5, the predominant modals for a given type of modality are printed in bold, less common ones in regular typeface, and rare ones in parentheses.

	disposition >	intrinsic >	deontic >	epistemic
Enabling modalities:	**can**	**can** (may)	**can** **may**	(can) **may**
Compelling modalities:		must	(must) **have to**	**must** have to

Table 5: The modals *can*, *may*, *must* and *have to* in the four types of modality.

Modal verbs are grammaticalized from main verbs, and their sense developments can be traced back to Old English. *Can* goes back to *cunnan* 'know how to do X' and, via implicature, developed the senses of 'ability to do X' and 'objective permission-granting'. *May* derives from *magan* 'have power, physical ability' and developed the senses of 'subjective permission-granting' and 'subjective epistemic possibility'. Why *can* has adopted objective enabling senses and *may* subjective ones is elusive. *Must* goes back to *mōtan* 'have to, be able to' and its meaning has, due to its competition with objective *have to*, been narrowed down to subjective compelling senses.

The distribution of these four modals gives the impression that deontic and epistemic modalities are more complex than the other two types of modality. In fact, they are usually at the center of studies on modality—it should be mentioned, though, that the most frequently used modal verb is *can* in the sense of intrinsic possibility.

(ii) Deontic and epistemic modality have been shown to share the property of force dynamics (Sweetser 1990). The notion of **force dynamics** pertains to the opposition between forces and counterforces. Forces typically apply to the physical and social worlds. Obligations are straightforward instances of force-dynamic situations. When your father is telling you, "You must clean up your room", he is adopting the role of a powerful force assuming that you, as the weaker counterforce, will comply with his request. Its equivalent in epistemic modality is logical necessity. When looking at old family photos, Dad might point at one and say: «This must be our great grandmother Mimi». He makes use of the force of evidence — yellowed photo, old-fashioned clothing, resemblance with their grandmother — that allows him to come to this conclusion. The counterforce would be a tinge of uncertainty, otherwise he would have said «This is great grandmother Mimi».

The deontic notion of permission also has a force-dynamic basis. When you are in authority to grant permission, you lift a potential barrier and thereby enable the permission-seeker to pass through. Likewise, when you express an epistemic possibility, as in "You may be right", you remove counter-evidence as a potential barrier so that the hearer is free to accept or dismiss the speaker's assessment. The rela-

tion between deontic modality and epistemic modality is metaphorical in nature: We understand the abstract domain of reasoning in terms of the socio-physical domain of interaction, which in its turn is understood in terms of the concrete domain of physical forces.

The view of modality in terms of force dynamics and metaphor is subtle and persuasive, especially in view of the fact metaphorical mappings from concrete domains onto abstract domains are noted all over. However, it does not include disposition and intrinsic modality and hence does not account for modality as a whole, the way people probably understand it. Following Langacker (2013), a commonality shared by all of the four types of modality is that the conceptualizer does not accept the situation referred to as real and strives to bring its potential realization under epistemic control. The force of reasoning in assessing a present or future situation is a matter of coming to terms with its uncertainty. The gist of this argument resides in the fact that root modality also involves striving for epistemic control, since these situations are to be realized in the future.

4. Conclusion

The two case studies on time/tense and modality have provided evidence for the claim that grammar is meaningful. The meanings of grammatical units are, of course, more general and more abstract than lexical meanings. As a result, grammar abounds in polysemy, and linguists are at pains to distinguish subtypes of a grammatical category. At the same time, polysemy is at odds with the principle of isomorphism, according to which one form corresponds to one meaning. This semiotic principle is at work when we see soccer players wearing the same jersey as belonging to the same team or when monosyllabic words starting with the consonants /sp/, such as *spit*, *spew*, and *spill*, evoke the same unpleasant connotation. Most words and, even more so, most grammatical constructions, however, have more than one meaning. Polysemy is, in fact, unavoidable in view of the limited stock of words and constructions provided by the language and the unlimited number of concepts people want to express.

Language communities have found an elegant solution to reconcile the isomorphic need of clarity and the economic need of keeping the number of words and constructions at a minimum: Polysemy is tolerated when the meanings of the linguistic sign are connected and relatable to a common, higher-level meaning. This was shown to be possible with the two senses of the *be going to*-Future and the four types of modality. The range of subtypes that belong to the overall grammatical category was shown to be determined by the common form(s): the *be going to*-construction and the modal verbs. Form and meaning are thus inseparably intertwined. This, of course, also applies to the converse part of the principle of isomorphism: Different forms convey different meanings. The range of a linguistic unit ends where it borders on another linguistic form.

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