

Modality in English



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Modality in English

Theory and Description

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Introduction

Raphael Salkie

Pierre Busuttil

Johan van der Auwera

This book contains some of the papers presented at the *Second International Conference on Modality in English* (ModE2), held at the University of Pau in September 2004. This conference followed the *Conference on Modality in Contemporary English*, held at the University of Verona in 2001, so in the same way this book is the successor to Facchinetti, Krug and Palmer (eds.) (2003), and Facchinetti and Palmer (eds.) (2004).

There are at least three general themes. One is the definition of the concept of modality, its relation to other concepts, and the general strategies to approach modal notions. The second theme is the study of the English modals. The third is the analysis of modal constructions other than auxiliaries. Of course, there is also an overlap, especially between the first and the second themes, for the general papers all illustrate the point with English modal auxiliaries.

What is modality? How should one study it?

For **Paul Larreya** it is important to distinguish between modality and modalization. The former is a mental system based on the notions of possibility and necessity. He discusses various subtypes, some known from other work (root, epistemic, deontic), and he argues that epistemic modality comes in two subtypes, called ‘problematic’ and ‘implicative’. He also discusses the status of volition. As for modalization, Larreya argues that we should distinguish five types and he argues that this is the right place to handle the effect of the past tense (yielding *might* as a ‘qualification’ of *may*) or the counterfactual uses. Most of the argumentation deals with modern English, but he also refers to German and to Old English.

Renaat Declerck argues that modality crucially involves a concept of “not-yet-factuality”. He defines this notion relative to three other notions, viz. factuality, hypotheticalness and counterfactuality. He also describes subtypes of this notion and illustrates their use in the analysis of a variety of temporal constructions such as *until* or *before* clauses and the future tense. But, most importantly for this volume, modality too is claimed to manifest a dimension of the ‘not yet factual’.

Keith Mitchell relates subtypes of modality to Lyons’s (1977) distinctions between first, second and third order entities, paying particular attention to what is sometimes called “existential modality”, as in *footballers can be sex maniacs*. He examines to what extent it makes sense to treat both modality and sentence mood as a kind of deixis, a question to which his answer is positive. This further leads him to consider the auxiliary *do* as a modal auxiliary and to throw light on quasi-subjunctive *should* (as in *it’s incredible that we should both have the same birthday*).

Raphael Salkie’s chapter argues for a prototype approach to modality, which is furthermore taken to be of typological value. He defines core modality in terms of four properties and applies the definition to the English auxiliaries. He also relates the concept of modality to the concepts of irrealis, mood, and evidentiality. The prototype approach, Salkie further argues, proves its utility in that it sheds new light on two puzzles in the analysis of English modals, involving the distinctions between *may* and *can*, on the one hand, and *must* and *should*, on the other. The solutions he proposes rely on applying a notion of degree of modality based on distance from the prototype, and he gives reasons to prefer his analysis to earlier work which takes a similar approach.

Jelena Timotijevic focuses on the relation between modality and subjectivity. She provides a survey of the way the notion has been used in the domain of modality. In her own proposal, based on ideas in Recanati (2004), the use of the notion relates to the distinction between the semantics and the pragmatics of modality: the subjective (uses of the) modals involve more pragmatics than the objective uses. Her proposal is inspired by, though not identical, to the one in Papafragou (2000). From this angle she also turns to the monosemy vs. polysemy debate, with monosemy being more appropriate for objective modals and polysemy for subjective ones.

English modal auxiliaries

The book contains six papers which are set within the Theory of Enunciative Operations, developed by Antoine Culioli (*cf.* Culioli 1990, 1995), three in this section and three in the next.

For the readers who are not familiar with the terminology used in this approach to discourse analysis, we offer a few notes which, we hope, are going to be helpful. The explanations we propose are, necessarily, simplified and partial, but we hope that they will enable readers to appreciate the principal arguments of these six papers. For a more substantial account in English, see Groussier (2000); see also Groussier and Rivière (1996) for definitions in French of the key terms and suggestions of English equivalents, and Bouscaren *et al.* (2008) for a glossary in English with extensive English translations of key passages from theoretical work.

The theory employs technical terms, as well as familiar terms which are used in specialised ways. A basic distinction is between the *speaker* (French *locuteur*) and the *enunciator* (Fr. *énonciateur*). A speaker is a human being who produces speech sounds. The enunciator is an abstract function, not a real person: the source of a set of *operations* which result in an utterance in a context.

Operations take place on several different levels. The most primitive level is that of *notions*, which can be thought of crudely as the things that words refer to: for example, the notion of TABLE. Speakers of a language will agree that certain entities in the real world are tables, some are clearly not tables, and others are unclear cases. The theory conceives of this in topological terms: each notion is associated with a *notional domain*, which has an *interior* I (tables), an *exterior* E (not tables) and a *frontier* F (unclear cases).

The next level is when notions are combined to produce a *predicative relation* – crudely: a proposition, the thing that is constant in *John loves Mary*, *Does John love Mary?*, *John may love Mary*, and so on. One operation on this level is *scanning* (Fr. *parcours*), in which the enunciator reviews all the possibilities without choosing one. The word *any* in *Pop by any time* or *I looked for soap but I couldn't find any* is a marker of a scanning operation. Predicative relations can themselves be treated additionally as com-

plex notional domains: they can be true in the real world, or false, or unclear as to truth value and thus in the frontier.

In order for a predicative relation to become a real utterance, a third level of *enunciative* operations applies to situate it in space and time and in relation to the knowledge, wishes, etc of the enunciator.

Modality has traditionally been treated within the theory in terms of three *planes* (Fr. *plans*), thought of as spaces within which operations apply. The first is the *plane of representation*, sometimes called the *pre-modal plane*, where the enunciator does not make a choice between the interior I and the exterior E. The second is the *plane of validation* where the enunciator chooses whether the predicative relation is true or false. The third is the *hypothetical plane*, sometimes called the *plane of fiction*, where the enunciator can consider imaginary or counterfactual situations, free from the constraints of reference to the real world. By using a modal operator such as a modal verb, the enunciator can operate on (alternatively, “work on” or “play with”) more than one plane in a single utterance.

Recent work in the theory has distinguished between two different types of operations at the third level of enunciative operations. Operations which evaluate the properties of a situation are called *qualitative*, while operations which relate to actual occurrences of a situation are termed *quantitative*.

As far as the metalanguage is concerned, the following terms appear in the papers which are set within the enunciative framework:

Otherness (Fr. *altérité*): A general term for opposition or contrast between two linguistic items. The contrast between a negative and a positive sentence is one type of otherness.

Path (Fr. *chemin*): If the enunciator is conceived as being detached from a notional domain, the choice of I or E can be represented as a path from detachment to either I or E.

Value (Fr. *valeur*): This word is sometimes used in the theory in a way that will be familiar to most readers – in expressions like “positive vs. negative value”, or in the sense of “value of a variable”. In the expression “epistemic value”, however, the word is used to mean roughly “meaning” or “use” or “meaning and use”.

Determination: Roughly this term refers to what determiners do to nouns – they make nouns more specific or establish their reference. Within the theory, however, the term has a broader use: most operations are thought of as determining linguistic items, including predicative relations, more precisely. This often involves situating one item in relation to another item which is already more highly determined.

The most comprehensive of the six papers is by **Alain Deschamps** and **Lionel Dufaye**. They present an account of the English modal auxiliaries *may*, *will*, *must*, *can* and *shall*. This formal analysis is illustrated in detail for *will* and special attention is also given to the combination of the modals with negation.

Gilbert Ghio analyzes the interrogative uses of epistemic *might*, as in *Might this be the beginning of the end?*, in the enunciative framework. It is argued that such questions can only be rhetorical and that the modal is outside the scope of negation in examples like *Might this not be the moment to give* He furthermore explains why this use is impossible for *may* and *could*.

Jean-Claude Souesme analyses the concessive uses of *may*, as in *Literature may not be as noble as mathematics, but* He claims that the concessive effect is primarily or exclusively triggered by markers such as *although* and *but*, and that the meaning of *may* is very close to its normal epistemic one. Souesme then characterizes the semantics of *may* in terms of the framework of Culioli and he provides an overview of the types of contexts that allow the concessive effect.

Two papers deal with the special uses of modal auxiliaries in legal English. **Ross Charnock** studies a legal use of the auxiliary *may* in which it has a meaning similar to *must*. The point is not simply that this coercive sense is an effect of pragmatics; rather, under certain conditions, it is taken to be an aspect of the literal meaning of *may*. The author analyses the coercive sense of *may* in three authentic cases. He tries to explain why legislators may even prefer this use of *may* to *shall*; the use of the latter is argued to be performative and thus bring along a sense of inevitability. He also comments on the fact that even though judges are supposed to take words in their literal sense, they are implicitly embracing a contextualist approach.

Christopher Williams discusses the present status of *shall* in legal English. Though it has been the most common modal in legal English for at

least six hundred years, its use is currently in decline, especially in Australia, South Africa and New Zealand. The author identifies the structures that take up the place left behind by *shall* in the *shall*-free texts, viz. the simple present, *must*, *may* and *be to*. He also speculates as to what will or will not happen with *shall* in the legal language of the US and the UK.

An Verhulst focuses on the expression of time in modal utterances, more particularly, on posteriority in expressions with *must* and *have to*. She pays attention to the aspectual nature of the infinitive following *must* and *have to*, to pragmatic information, and to the role of adverbs of time and frequency.

Modality beyond modal auxiliaries

The chapter by **Christiane Rocq-Migette** is a detailed corpus study of the epistemic modality expressed by constructions of the type *I would be surprised if ...* and *it would be surprising if...* It is shown that the use of a predicate of surprise can combine with other factors and yield the epistemic interpretation. Special attention is also given to the use of negation and tenses.

Juana I. Marín-Arrese explores how dimensions and degrees of speaker commitment and subjectivity are expressed in three registers of spoken British discourse, all connected to a court case, but different as they pertain to either an institutional domain (the Government), a social domain (the BBC) or a private one (Family). The author analyzes the semantic categories and the formal tools, the latter including modal auxiliaries, but not restricted to these, and then sets out on a detailed corpus analysis. The general perspective is a cognitive linguistic one.

Agnès Celle does not study verbs or verbal mood but adverbs, more particularly, the hearsay adverbs *reportedly*, *allegedly* and *supposedly*, working in the enunciative framework. The adverbs are considered modal in the sense that they crucially concern the speaker's commitment to the utterance, or, for these adverbs, his or her lack of commitment. Starting from Greenbaum (1969), she develops a detailed corpus-based syntactic and semantic analysis of these three adverbs and of the way they also differ from other modal adverbs such as *obviously* or *apparently*.

Claude Rivière, working within Culioli's framework, examines two types of "hidden" modalities through a consideration of the *it be ... since / before...* constructions. First, a negative meaning can be expressed without

[_glossary_fe/defs/TOEEn.asp](#)

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Towards a typology of modality in language¹

Paul Larreya

The typology presented in this paper is based on a distinction between *modality* and *modalization*. The latter will be defined as the use speakers make of modality, depending on (i) the type of knowledge they have, or do not have, concerning the situation which is submitted to the modal judgment, and (ii) on the type of knowledge the hearer is assumed to have, or not to have, concerning that same situation – henceforth referred to as the *modalized situation*. (In this paper, the word *situation* will be used to designate the referent of a proposition – consisting of a subject and a predicate – irrespective of whether this referent is a state, a change of state or an action.) The English modal verb forms (i.e. the modal auxiliaries and modal phrases like *HAVE TO*, *BE ABLE TO*, etc.) will be the main source of illustration.

1. Types of modality

I will define modality as a mental system – or sub-system – based on the mutually related concepts *possibility* and *necessity*. This is obviously a “narrow” definition, which excludes what is sometimes called sentence modality (notably assertion and interrogation), but not negation, which is part of the relation between possibility and necessity. It also excludes irrealis, which may be associated with modality, but always remains distinct from it (see Larreya 2003), and such categories as evidential boulomaic or optative modality, which could and perhaps should be included in a wider definition.

As has been known since at least Aristotle’s *de Interpretatione*, possibility and necessity – whether they be logical, physical or moral – are related by a double negation (*It is possible that P* = *It is not necessary that non-P*, and *It is necessary that P* = *It is not possible that non-P*). They constitute the core of modality, but by no means its entirety: there are a range of modal meanings which are situated at the periphery of what may be called the modal square (necessity / non-necessity / impossibility /

possibility). The modal square can explain, for instance, the semantic resemblance between *You can't NOT go!* and *You've got to go!*, but it does not make it possible to account for the nuance of meaning which separates the two forms. Or again – and still more importantly – although the core modal values are sufficient to explain why *She can swim* and *It's not impossible for her to swim* are semantically related (as are *I can't lift this suitcase* and *It's impossible for me to lift this suitcase*), they cannot account for the fact that these forms are far from synonymous.

Figure 1 is a schematic representation of the typology of modality proper (as distinct from modalization) proposed in sections 1.1-1.3 of this paper. The terms that appear in the tree diagram will be defined in these sections. Concerning problematic modality and implicative modality, however, a brief commentary may be useful at this stage: both *He must be tired* (used to express certainty) and *You have to be mad to do that* have to do with the attribution of some kind of truth-value to a proposition through some type of inference, but the inference is “stronger” in the latter case than in the former.

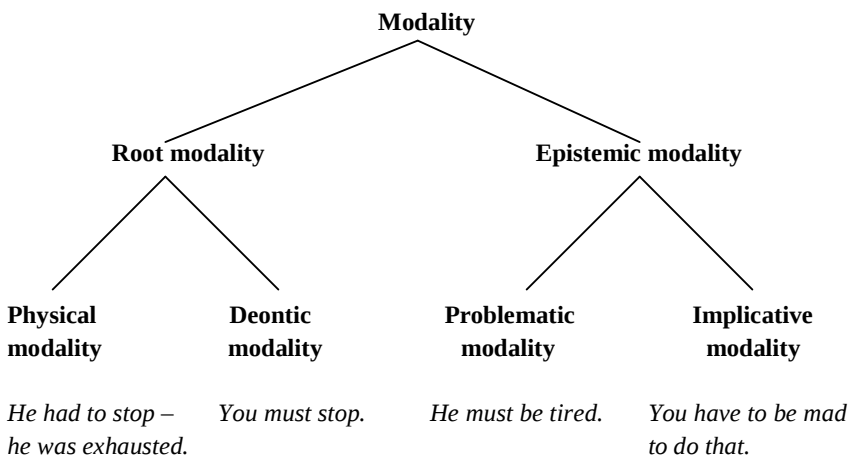


Figure 1. Types of modality

1.1. Root modality and epistemic modality

The “root” v. “epistemic” distinction is part of a division which extends far beyond modality, or even language. The two categories belong to two different domains of human mental activity: the domain of *affect and/or action* and the domain of *knowledge*.

The affect/action v. knowledge distinction corresponds to an important division in the domain of psychology (even though psychologists consider cognition never to be independent of affect): as is well known, cognitive and perceptual psychology constitute a field of research which is generally distinct from clinical psychology, social psychology, etc. In language, the affect/action v. knowledge opposition can be observed in several areas of morphology and syntax. In English, for example, it can be observed in the syntax of constructions which follow certain speech-act verbs (see Traugott 1989: 43–47; Sweetser 1990: 69–73; Larreya 2001b: 115–121), and, in Spanish, in the opposition between the verbs *pedir* and *preguntar*: the former denotes a “root” speech-act (you use it to ask the hearer to *do* something), while the latter denotes an epistemic speech-act (you use it to ask for some *information* from the hearer). It can also be observed in the semantico-syntax of such English conjunctions as *because* or *so* (see Sweetser 1990: 76–86). The case of *because* deserves to be discussed here, as it bears a particular relation to modality.

Deléchelle (1989: 412–430) has shown the existence of a gradient between the two main uses of *because*.² At the two ends of the gradient are what Deléchelle calls “explicative *because*” (as in *He’s ill because he ate too much last night*) and “justificative *because*” (*He’s ill, because he didn’t turn up for work this morning*). Deléchelle claims that (i) while the former is simply based on the expression of a “*p because q*” relation, the latter implicitly contains a proposition approximately paraphrasable as *I say/think/conclude that...[p, because q]*; and (ii) in some cases, the implicit proposition is replaced (or made explicit) by an adverb like *apparently* or *perhaps*, or by an epistemic modal and/or the phrase *I think*, as in:

- (1) *I think I must’ve hit my head, because I was like out on my feet.*
(quoted by Deléchelle, 1989: 419)

Concerning the relation between root and epistemic meaning (both within and outside the domain of modality), I will argue in favour of the same type of analysis as that proposed by Deléchelle concerning the relation between

the two uses of *because*, and try to show that the relation is metonymic (not metaphoric) in nature.

As a preliminary, a brief discussion of metonymy will be necessary. What follows only concerns metonymy in language, although, as is well known, metonymy is not limited to language. (An example of a conventionalized non-linguistic metonymy is a horseshoe sign used to indicate a bridle path.) The use I will make of the concept will rely on the assumption that, in language, any metonymy is made up of two interrelated components: a purely mental component, which is based on some sort of relation (for example the relation between a part and the whole, as when we say *the strings* instead of *the stringed instruments*), and a linguistic component, based on a more or less complex elliptical process. (A simple example is *England[’s football team] won the match*.)

Let us now revert to the relation between root and epistemic modality – or rather between root and *problematic* modality. (As we shall see in section 1.3, the relation between root and *implicative* modality is different, and more complex.) My claim is that, as a general rule, problematic modality is derived from root modality through a metonymic process whose elliptical component consists of a particular type of proposition roughly equivalent to “I think that...”. (In a few cases, however, this movement is reversed: it is root meaning that is metonymically derived from epistemic meaning. For a discussion of this type of semantic mutation in *expect/be expected to, be supposed to* and *be sure to*, see Larreya 2001: 119–121.) Thus, assuming that the root meaning of the ambiguous sentence *He must eat a lot of bread* is, roughly speaking, “something requires that he eat a lot of bread”, I suggest that the (derived) epistemic-problematic meaning is “something requires that *I think that* he eats a lot of bread”. (In paraphrases, the verb *require* provides a convenient substitute for the modal predicate which underlies root necessity or possibility, and whose essential component may be assumed to be CAUSATION +/-VOLITION. Thus, *Eventually he had to stop* could be analysed as “eventually something/somebody [wanted and] caused him to stop”. On this hypothesis, see Larreya 1984: 73–100, and below, 1.4.1.) Similarly, *He can/may eat a lot of bread* can be glossed as “nothing requires that [I think that] he (does) not eat a lot of bread”. In other words, what constitutes the difference between root and epistemic-problematic meaning is the presence or absence in the semantic structure of a proposition approximately paraphrasable as *I (or X) think(s) that...* (or, in some cases, as *I believe /say that...*), which I will call a *speech/thought-act*

proposition. This proposition can be considered “floating”: its presence or absence depends on the context, and is unclear in the (relatively rare) cases of indeterminacy between root and epistemic modality (e.g. in *He left ten minutes ago – he could be home by now*).

1.2. Physical and deontic modality

As a first approximation (a more precise definition will be given in 1.4.1), physical and deontic modality, the two types of root modality, can be defined as, respectively, physical constraint/possibility and moral constraint/possibility – or their negations. The frontier between the two categories is not always clear. The sentence *He had to abandon his project*, for example, may be a case of indeterminacy or merger between the expression of physical obligation (...*because he was exhausted*) and that of moral obligation (...*because he was duty-bound to renounce it*).

1.3. Problematic and implicative modality

In what follows, I will be using two terms – *truth-value* and *implication* – which may be considered to belong primarily to formal logic, but to which I will give purely linguistic definitions. The concept of *truth-value* will not be the binary concept of formal logic: it will apply not only to TRUE and FALSE but also to what may be termed intermediate values such as PROBABLE and POSSIBLE, and will be used when referring not only to propositions but also to their referents (i.e. situations). As to *implication*, it will be defined as a relation which can be paraphrased as *if ... then ...*, and which is established between two propositions (or between the situations they refer to), so that it will have little in common with the relation of implication of formal logic and with the truth-table which serves to define it. For the sake of convenience, however, the sign $\Rightarrow$ will be used to represent linguistic implication.

Epistemic modality (whether problematic or implicative) consists in the attribution of a truth-value to a proposition (or to the situation that constitutes the referent of that proposition). In the case of implicative modality (e.g. in *You have to be mad to do that*), the truth-value is one of the two extreme values (TRUE / FALSE). In the case of problematic modality (of which *You must be tired* and *It may/might rain tomorrow* are

examples),³ it is an intermediate (or “weak”) value, such as PROBABLE or POSSIBLE.

Implicative modality consists in linking two propositions (whose referents are two situations or sets of situations) by a relation of implication. The relation can be represented by $A \Rightarrow B$ (A implies B), A being the *antecedent* of the implication and B the *consequent*. Thus, in *You have to be mad to do that* the antecedent is *X does that* and the consequent is *X is mad*: the meaning can be glossed as “you do that” IMPLY “you are mad” (or “being mad is a necessary condition for doing that”).

At this point, it should be emphasized that implication is a “strong” relation. Indeed, as we have just seen, implicative modality involves *absolute* truth-values (TRUE and FALSE), unlike problematic modality, which is concerned with “weak” truth-values. Thus, *You have to be mad to do that* can be paraphrased as “if you do that you are mad” – not as “if you do that you are *probably* mad”. This strong nature of the truth-values involved is the main characteristic of implicative modality, clearly differentiating it from problematic modality.

There are two types of implicative modality, which I will call *explicit* and *elliptical*.

Explicit implication (of which *You have to be mad to do that* is an example) has two characteristics. Firstly, it explicitly mentions the antecedent of the implication in a clause or phrase which is syntactically linked to the modal form. Secondly, it is, in most cases, abductive (i.e. reverses the cause-consequence relation):⁴ it infers the cause (*X is mad*) from the consequence (*X does that*), so that, somewhat paradoxically, it is the consequence (not the cause) which is the antecedent of the relation ($X \text{ does that} \Rightarrow X \text{ is mad}$).⁵

Elliptical implication, whose main markers in the English modal system are *WILL* and *SHALL*, is characterized by two facts: (a) the antecedent of the relation is not mentioned explicitly (often because it is not at issue for the speaker) and (b) the relation is rarely abductive (i.e. rarely reverses the cause-consequence relation). The first characteristic makes it possible to symbolize elliptical implication as $(A) \Rightarrow B$, where the parentheses represent the fact that the antecedent remains unexpressed. In *I’m sure he’ll win the match* or in *The phone’s ringing – that’ll be John*, the modal judgment consists in inferring a consequence from a set of “known” facts (which are not specified). In *Accidents will happen* or in *He’ll sit there for hours looking at the walls* (where the modal meaning is “characteristic behaviour”), the unexpressed antecedent is an intrinsic characteristic of the

referent of the syntactic subject. (*Accidents will happen*, for instance, can be glossed as something like “the nature of accidents is such that they necessarily happen”.) When the modal has a volitional meaning, the antecedent is a proposition whose predicate is volitive: roughly speaking, *John won’t answer my questions* (meaning *John refuses to answer my questions*) can be glossed as “John’s not wanting to answer my questions has as its consequence that he does not answer my questions.” (This case will be examined more extensively in sections 1.4.1-1.4.2).⁶

Unlike problematic modality, which in most cases is clearly distinct from root modality, implicative modality often overlaps with deontic modality. An example is *In Oklahoma you have to be 18 to marry without parental consent*.

We can now examine the relations between implicative modality and the other types. These relations are rather complex – much more so than the often-studied relations between root modality and what I have called problematic modality. Although conceptually akin to problematic modality, implicative modality is very different from it in several respects. Furthermore, explicit and elliptical implication bear different relations to the other types of modality.

1.3.1. Explicit implication

As we have seen, explicit implication is, as a general rule, abductive (it reverses causal relations). In:

(2) *You have to be mad to do that.*

(which can be glossed as $X \text{ does that} \Rightarrow X \text{ is mad}$), the proposition *X does that* is the antecedent (not the consequent) of the relation. As is well known, the consequent of a relation of implication is a necessary condition for the antecedent, and the antecedent is a sufficient condition for the consequent. So, an implicative relation like that of (2) can be considered from two points of view. If the focus is set on the necessary condition and the consequent, the relation may be glossed as “being mad is a necessary condition for doing that”. But the relation can also be considered as having the antecedent (*X does that*) as its point of origin. This, in fact, is what the speaker normally does: the basis for his or her judgment is the fact “X does that”. Now, the sufficient condition that corresponds to $X \text{ does that} \Rightarrow X \text{ is mad}$ may make sense in formal logic, but (at least apparently) it does not in

language: “*X does that*” is a sufficient condition for “*X is mad*” does not mean anything. This gloss, however, does make sense if a speech/thought-act proposition (see above, section 1.1), which in this case would be *I believe/say that...*, is inserted: “*X doing that is a sufficient condition for me to believe that X is mad*”.

The presence in the semantic structure of an ellipted speech/thought-act proposition is therefore a common feature of problematic and implicative-elliptical modality. Another common feature is the fact that problematic modality also uses as its basis – as a sort of antecedent – a set of known facts. Problematic modality, however, differs from implicative-elliptical modality as regards the nature of the relation established between the basis (or antecedent) and the conclusion (or consequent). As noted before, the relation is a weak one in the case of problematic modality, so that the truth-values involved are also weak (they are, for instance, “probable” or “possible”), whereas in the case of implicative modality (whether explicit or elliptical, in fact) the relation is strong (or absolute), and the truth-values involved are “true” or “false”.

1.3.2. Elliptical implication

The conceptual links between implicative-elliptical and deontic modality will be examined in section 1.4.3, through a discussion of the grammaticalization of *WILL* and *SHALL*. In the present section, I will merely (and perhaps more superficially) investigate these links through some of the uses of *WILL*.

As it does not explicitly mention the antecedent on which the implication is based, elliptical implication is more similar to problematic modality than is explicit implication. One form of elliptical implication, which may be called *strong conjecture* (as in *The phone’s ringing – that’ll be John*), is indeed very similar to the type of problematic modality expressed by *must* (which does not explicitly mention the facts on which the modal judgment is based). There are, however, important semantic differences between conjectural *will* and epistemic *must* (see for instance Palmer 1990: 57–58), which may have something to do with the fact that the conjectural use of *will* is related to both its “habitual” use (in other words to the expression of characteristic behaviour) and to its “futural” use. (On this double relation, see Coates 1983: 178.)

The “habitual” use of *will* is, as we have seen, fundamentally implicative, but it is marginally related to material possibility and perhaps to weak volition (see below, 1.4.2): if, speaking of a house, someone says *It will accommodate five people*, they mean that it *can* accommodate five people, and perhaps that it is, so to speak, “willing” to accommodate them.

The “futural” uses of *WILL* fall into two categories, between which there is much overlap and indeterminacy: *predictive* (as in *Leeds will win the match*) and *volitive* (as in *OK, I’ll do the dishes* in contexts where an essential part of the meaning is “I am willing to / I agree to do the dishes”). Predictive meaning is purely epistemic. Volitive meaning is based on a strong (implicative) relation whose antecedent is the referent of the syntactic subject’s volition. It is, therefore, akin to deontic modality. (This point will be investigated more thoroughly in section 1.4.4.)

1.4. Volition and modality

German provides an argument in favour of regarding volition as part of modality: its modal system (which is idiosyncratic, and therefore may be thought to be the formal counterpart of a semantic system) includes a verb (*WOLLEN*) which fundamentally expresses volition. The case of German, however, is far from being general. (In English, for instance, the modal *WILL*, although etymologically akin to *WOLLEN*, is only marginally a marker of volition.) If the question is to be addressed from a purely semantic point of view, it seems difficult to regard volition as one of the prime constituents of modality; or, at any rate, it seems difficult to place it at the same level as possibility and necessity. It nevertheless plays an important role in modality, on several counts.

1.4.1. Volition and root modality

Volition is present at two levels of the meaning of a deontic utterance like

(3) *John must leave.*

First, the concept of obligation expressed by the modal includes some sort of volition: part of the meaning of (3) is the fact that some practical or moral principle, and perhaps somebody, *require* (or *want*) John to leave. (For a hypothesis on the role of volition, alongside causation, in deontic

necessity, see above, 1.1.) Second, the use of *must* (and, relatedly, the fact that “leaving” is a voluntary act, unlike, e.g., “sneezing”) carries with it the implication that, if John obeys the injunction contained in (3) and actually leaves, he will have *decided* to leave (although perhaps reluctantly). This semantic element, in my opinion, is part of the *meaning* of the utterance – and not an implicature of it. However, Gordon and Lakoff (1975: 85–87) analyse it, or something very similar to it, as one of the three “hearer-based sincerity conditions” of requests, and therefore situate it at the same level as another semantic element which I think is an implicature of such an utterance as (3), and which has to do with volition: if left to himself/herself, the person who is the object of the directive speech-act would probably not carry out the requested action.

So, there are two volitional elements implicitly present in the meaning of such a form as (3). I will call the first *external volition*, and the second *internal volition*. (The use of the adjectives “external” and “internal” justifies itself if one considers the place and role of the volitional elements in relation to “John”.)

Now, consider:

(4) *John had to stop: a huge snowdrift was blocking the road.*

in which the modal meaning of *had to* is “physical necessity”. As regards *internal volition*, there is no fundamental difference with (3): *John had to stop* implies that, although John did not stop of his own free will, his act was in some way intentional. As to *external volition*, it does not seem to be part of the semantic make-up of (4), and, in this context, *John had to stop* may be glossed approximately as “X caused John to stop”.

In the domain of possibility, there is a similar difference between *John can go in – the boss gave him permission*, which implicitly refers to the boss’s volition (or, more precisely, to his/her willingness), and *John can go in – he’s got the key / he’s clever enough*, in which *can* denotes an ability which is not directly linked to any external volition. So, if a general conclusion can be drawn from the preceding cases, it is the presence or absence of external volition which differentiates deontic from physical modality.

1.4.2. Subjectal (or simple) volition

An example of this is

(5) *OK, I'll tell you.*

The main difference between subjectal volition and external volition – exemplified by (3) – can be described as follows: in the case of external volition, the “subject” and the “object” of the volition are different, while in the case of subjectal volition they are identical. Subjectal volition also differs from *internal* volition (defined in 1.4.1): it is more explicit, and more central in the meaning of the modal form – although, as we shall see, it is only part of that meaning.

A further distinction can be made within the domain of volition.

- (i) *Strong volition* (as in *I WILL stay here*) is associated with the implicature that some physical obstacle, or some external volition, might prevent the accomplishment of the “willed” situation. (In the case of *I WILL stay here*, this implicature may be made explicit by the speaker adding something like ...*whether you like it or not.*)
- (ii) *Weak volition* (or *willingness*) is also associated with an implicature: that of the existence of some external volition directed towards the accomplishment of the modalized situation. Thus, *OK, I'll do the dishes* could be said as a response to a request made by the hearer. As is well known, there is between weak volition and strong volition the same relation (a double negation) as between possibility and necessity: *I am willing to stay* is logically equivalent to *I have no desire not to stay*. Or again, *You may stay* is roughly equivalent to *I am willing for you to stay*, and *You must stay* to *I (or something) require(s) you to stay*.
- (iii) *Indefinite volition* carries no implicature of the existence of any external volition, either in favour or against the accomplishment of the modalized situation. (However, it is notionally nearer to strong than to weak volition, as there is no reason to think that it contains a double negation.) An example is *I think I'll have one more small whisky [...]*. (BNC, H8M 870)

1.4.3. *Factual and non-factual volition*

Compare:

(6a) *I want to go.*

(6b) *I will go.*

The volition expressed in (5a) can be said to be *non-factual*: the sentence does not mean that the act of going will be accomplished. (It is possible to add: ...*but I may not be able to.*) In (5b), the volition is of a different nature. First, it is only part of the meaning of *will*, the form which expresses it. (This question will be discussed in 1.4.4.) Second, it can be said to be *factual*: the sentence presents as real (as true) the future accomplishment of the act of going. (This use of the words *factual* and *non-factual* is of course a terminological hypallage: the factuality or non-factuality concerns the situation that is “willed” – not the volition itself.) Unlike in the case of (5a), it is not possible to add ...*but I may not be able to.* Several other facts argue in favour of the factuality of *WILL/SHALL* used as markers of futurity. Among these is their compatibility with such epistemic adverbs as *maybe* or *possibly*: compare *The horse is in excellent form – (maybe) he’ll win the race* and *The horse is in excellent form – (*maybe) he must win the race.* (Non-factual epistemic verb phrases cannot be “weakened” by epistemic adverbs: they are already “weak”.) What is to be taken into account to determine the factuality or non-factuality of a given form is of course *linguistic reality* (i.e. what the speaker *says*), and not *psychological reality* (what the speaker *thinks*) or *physical reality* (what happens/happened/will happen in real fact).

Factuality, indeed, is a necessary component of futurity (whether “volitive” or “predictive”), as distinct from future-time reference; for instance, *may* is not usually considered a marker of futurity when used to refer to a future situation, as in *It may rain tomorrow*. Conversely, “pure” volition is not, *per se*, factual. Such verbs as *want* (mentioned above), *wish* and lexical *will* are obviously not factual. Neither is the German modal verb *WOLLEN*, in spite of its common origin with the English modal auxiliary *WILL*.

A further remark needs to be made about factuality. In the modal system of English – and probably of any natural language – a distinction may be made between two types of factuality: on the one hand *a priori* factuality, as in (5b) or in *If you disconnect the battery the car won’t start*, and on the other hand *a posteriori* factuality, as in *I’ll have to take the bus this*

morning as the car won't start or in He'll stay there for hours doing nothing.⁷ The former generally carries less credibility than the latter, and, for this reason, may sound "weaker".

1.4.4. Volition and implicative modality

The semantic and morphosyntactic mutation that led from the Old-English verb *WILLAN* to the Modern-English modal auxiliary *WILL* (in other words, the grammaticalization of *WILL*) provides a good illustration of the relation between subjectal volition and implicative modality.

The most important change that *WILLAN* underwent in early Old English was its gradual shift towards factuality. This was particularly clear when the verb was used in the present indicative with a first-person subject. Tellier (1962: 64–69) shows for instance how, in *Beowulf*, the form *ic wille/wylle* can express promise and/or some sort of immediate future (the semantic shift being from "I want to..." to "I'm going to..."), as in *Nu ic, Beowulf, þec, / secg betsta, me for sunu wylle / freogan on ferhþe* ("Now, Beowulf, best of men, I say to you, I will cherish you in my heart like my own son" – *Beowulf*, 946–948). Tellier also points to another important development in the semantic evolution of *WILLAN*: while there are in *Beowulf* only a few instances of the verb being used to denote what may be termed characteristic behaviour (cf. what Palmer, 1990: 136–137, calls "power" and "typical activity"), Alfredian prose is rich in examples of this type of use, in which the *WILLAN* + infinitive construction is obviously factual. One of his examples is *se hunde wile aspiwan þone mete þe hine hefegap on his breostum* ("the dog vomits the food that is heavy on its breast").⁸

In fact, almost all of the semantic values of present-day English *WILL* – some of which seem to have little in common with the original meaning of volition – were already present in its ancestor *WILLAN* before the end of the Old English period. The main question posed by the grammaticalization of *WILLAN/WILL* is then the following: how did the original meaning of volition which characterized *WILLAN* come to evolve into such a wide variety of meanings?

Any volition is necessarily directed at some situation (or state of affairs), and implies the existence of three elements: the volition itself (symbolized by V in Figure 2), the "willed" situation (S in Figure 2), and the relation between the volition and the "willed" situation (represented in

Figure 2 by various types of arrow). This relation may be either non-factual, as in *I want to go*, or factual, as in *I will go*. (In Figure 2, a dotted arrow represents a non-factual relation, and other types of arrow represent factual relations.) The main stages in the grammaticalization of *WILLAN/WILL* can be schematically represented as in Figure 2 (comments on schemas below):

- (i) **V**> S
- (ii) **V** —> S
- (iii) V/X —> S
- (iv) (X) ⇒ S

Figure 2. From *WILLAN* to *WILL*

The first two stages – (i) and (ii) – simply correspond to the shift from non-factual to factual volition. At these stages, the main focus of the meaning (represented in Figure 2 by bold type) is still on the volition proper. This, however, changed in proportion as the meaning of *WILLAN/WILL* + verb extended itself: the main focus moved from the first element of the relation to the second and third elements (i.e. from the origin of the relation to the relation proper and to the resulting situation). The third stage – (iii) – consists in the metonymic extension of the first element of the relation. The relation proper remains basically the same (it is a “factual” relation of the cause-to-effect type), but its origin (the “cause”) is no longer necessarily the *volition* of the referent of the subject: it may be, for instance, a set of his/her/its inherent characteristics (in the case of *WILLAN/WILL* expressing characteristic behaviour), or a set of known facts and circumstances whose consequence will be the accomplishment of the modalized situation (in the case of the expression of a prediction).

The last stage – (iv) in Figure 2 – corresponds to the basic meaning of present-day English *WILL*, and is not very different from stage three. It is characterized primarily by a lesser emphasis on the origin of the relation (which origin may remain rather vague, and, as in stage three, need not be “volitional”), and by a greater emphasis on the relation itself, which is more abstract, and simply consists of an implicative link whose antecedent is unexpressed (hence the parentheses around X in the last line of Figure 2).

The counterpart of *WILLAN/WILL* in the field of extra-subjectal (i.e. external) volition is obviously **SCULAN/SHALL*. As is well known, what

**SCULAN* fundamentally expressed was obligation (even though its original meaning, which extended itself metonymically, was approximately that of present-day English *owe*), in other words some form of external volition. Its semantic evolution was somewhat parallel to that of *WILLAN*: very early in the history of Old English, it specialized in the expression of *factual* obligation. This of course only concerned present indicative forms, and was particularly clear in uses with a second-person subject; among other examples, Tellier (1962: 72) quotes *Nu þu, Andreas, scealt eþre geneþan / in gramra gripe* ("Now, Andreas, you shall soon venture into the grasp of foes" – *Andreas*, 950–951). With a first-person subject, and if the verb that followed denoted a "voluntary action", **SCULAN* could express self-imposed obligation – or, in other words, could express a promise, as in *Ic þe sceal mine gelæstan / freode, swa wit furðum spræcon* ("I shall fulfill my friendship to you, as we have agreed" – *Beowulf*, 1706–1707).⁹ From this stage on, the process of grammaticalization undergone by **SCULAN* was basically the same as that undergone by *WILLAN* (even though it gave rise to a narrower range of meanings), and can be represented in the same way as in Figure 2, if the symbol V (subjectal volition) is replaced by a symbol standing for obligation or extra-subjectal volition. The end result (stage four in the figure) was nearly the same as in the case of *WILLAN*/*WILL*: **SCULAN*/*SHALL* came to fundamentally express necessary consequence. The difference which, beyond this common characteristic, separates *WILL* from *SHALL* in present-day English is obviously linked to their respective origins. It can be described in terms of markedness v. unmarkedness. While *WILL* unmarkedly expresses necessity (or, more precisely, necessary consequence), *SHALL* is able to specifically express what may be called *subjectively oriented necessity*. In other words, *SHALL* may express a form of necessity which more or less involves the speaker/hearer, and/or may be chosen in preference to *WILL* if the speaker wants to give more formality to his/her utterance.

This description of the semantic difference between *SHALL* and *WILL* is based on the following hypothesis: the modals *MAY*, *MUST*, *NEED* and *SHALL* are *subjectively oriented* (in contrast to *CAN*, *DARE*, *OUGHT* and *WILL*, which are *neutrally oriented*); they are able to (but do not necessarily) express a modal judgment which presents itself as reflecting the will or opinion of the speaker (or of some authority on whose behalf s/he speaks, or, in interrogative utterances, of the hearer), and/or, in some contexts, they are perceived as more formal than their neutrally oriented counterparts, which

are essentially *CAN*, *HAVE TO*, *NEED TO*, *WILL* and *OUGHT*. (The latter characteristic, which is socially motivated, is linked to the former.)

2. Types of modalization

The way of using modality (be it root or epistemic), and in most cases the choice of modal forms, depend largely on whether what is submitted to the modal judgment is (i) a situation whose existence is a well-established fact, or (ii) a situation whose existence cannot be ascertained – either because it is situated in the future (as in *You must see that film!*) or because it is outside the scope of direct knowledge (as in *He must be at home at the moment*). This is the domain of *modalization*, which can be defined as the way in which modality is used in utterances, depending on (i) the state of knowledge of the *speaker* concerning the modalized situation and (ii) the assumed state of knowledge of the *hearer* concerning that same situation.

Table 1 represents the two fundamental types of modalization (*a priori* and *a posteriori*) and their subdivisions.

Table 1. Types of modalization

A priori modalization		A posteriori modalization		
Simple modalization	Qualified modalization	Constative modalization	Evaluative modalization	Counterfactual modalization
You <u>can</u> ask John.	You <u>could</u> ask John.	He <u>must</u> leave cigarette butts everywhere!	It's a good thing he <u>should</u> have some rest.	He <u>should</u> have told them.
You <u>must</u> ask John.	You <u>should</u> ask John.			
He <u>must</u> be there by now.	He <u>should</u> be there by now.	He'll sit there for hours.	It's not surprising he <u>should</u> have left.	He <u>should</u> be here by now [and he's not].

(First row of examples: modalization of *root modality*. Second row: modalization of *epistemic modality*.)

The first division is between *a priori* modalization and *a posteriori* modalization. In the case of *a priori* modalization, the speaker does not

know, or pretends not to know, the exact truth-value of the modalized situation. In the case of *a posteriori* modalization, the speaker knows, or pretends to know, that truth-value. (However, we shall see that in the case of counterfactual modalization the object of the modalization is not the “known” situation itself.)

A priori modalization subdivides itself into *simple modalization* (as in *It may rain tomorrow*) and *qualified modalization* (as in *It might rain tomorrow*). In English, qualified modalization is characterized by the use of the “past” tense, which adds a presupposition of doubt to the modal judgment. (On the non-temporal uses of the “past” tense, see Larreya 2003.)

Constative modalization (unlike evaluative and counterfactual modalizations) establishes a close link between the modality and the modalized situation. In most cases, the utterance serves to inform the hearer of the existence of the modalized situation (or, in other words, it *asserts* that existence). In some cases, however, it *presupposes* the existence of the situation (an example is *Since you will insist on calling him “my dear friend”, I’m surprised you don’t invite him over more often* – BBC, Radio 4, 21 August 2004), and the modal necessarily bears nuclear stress. Here, modalization is effected through a mental movement which, starting from the situation, goes back to its causes or circumstances, so as to somehow explain its existence – even though the main focus of interest may seem to lie more on the situation itself than on its origin.

In contrast, *evaluative modalization* is totally exterior to the situation. It presupposes the existence of the situation, and the modal form simply expresses the speaker’s opinion of it. The judgment may be deontic in nature (the situation being judged either good or bad – with various nuances of “goodness” or “badness”) or epistemic (the situation being judged either logical or illogical – here again in various nuances, expressed by such words as *normal*, *surprising*, etc.), with cases of indeterminacy between the two types of modality, as in (e.g.) *It’s normal he should have some rest*. In fact, it is in the superordinate clause – e.g. in *It’s a good thing/It’s surprising that...* – that the modal judgment is primarily expressed. The modal *should* expresses it redundantly in the subordinate clause, as the result of a sort of metonymic transfer which is somewhat similar to the phenomenon traditionally called tense concord.

Counterfactual modalization is a type of *a posteriori* modalization in which the “known” situation is not directly the object of the modal judgment. In *You should have told him*, for instance, the “known” (or

“real”) situation is “You did not tell him.” (The existence of this situation is presupposed; it is of course known to the *speaker*, but not necessarily to the *hearer*. On cases in which the presupposition corresponds to “new” information, see Larreya and Watbled 1994: 71–74.) The object of the modal judgment is a “theoretical” situation (“You told him”) which is an inverted image of the “real” (presupposed) situation: the truth-value of the “theoretical” situation is the contrary of that of the “real” situation. (*You should have told him* can be glossed as “There was a moral obligation for you to tell him – but you did not tell him.”)

There are many cases of indeterminacy between counterfactual (*a posteriori*) modalization and qualified (*a priori*) modalization. An example is *You should get more exercise*, which is counterfactual in so far as it concerns the present period of time (it presupposes “You are not getting enough exercise”) and tentative in so far as it concerns the future.

3. Concluding remarks

I have attempted to show that it is appropriate to make a distinction between modality proper and what I call modalization. Modality, however, is what poses the most difficult problems. If possibility and necessity are the two basic concepts on which it rests, their definition – at least as far as language is concerned – necessarily involves volition.

Modalization cuts across types of modality. Within each type of modality, it influences the choice of the modal form. (For instance, counterfactual obligation cannot, in present-day English, be expressed by *MUST*. Constative obligation is very often expressed by *HAVE TO* – and rarely by *MUST*.) Modalization also has an effect on the syntax of modals. Thus, it is not fortuitous that (with a few rare exceptions, which involve *must* and *might*) the only modals whose past tenses can be used freely to express a narrative past are the two “objectively oriented” modals *CAN* and *WILL* used in constative contexts; this concerns two types of use of *CAN* – “physical or moral possibility” and “occasional characteristic or behaviour”, exemplified in (7) and (8) below – and three uses of *WILL* – “isochronal volition”, “habitual characteristic or behaviour” and “insistence”, exemplified in (9), (10) and (11):

(7) *She could swim at the age of two.*

(8) *He could be very sarcastic.*

(9) *He was mad at her because she wouldn't answer his questions.*

- (10) *She'd take the bus every morning at 8.30.*
 (11) *He WOULD make that remark.*

Notes

1. This paper has greatly benefited from the thoughtful comments made by Johan van der Auwera, Pierre Busuttil, Raphael Salkie and an anonymous reviewer on an earlier version. I wish to express my gratitude to them. Any remaining errors and shortcomings are of course my own.
2. According to Sweetser (1990: 76–77), there is a third type of use of conjunctions such as *therefore*, *although* or *because* in which the utterance is “the instrument of a speech act”. (Her example for *because* is *What are you doing tonight, because there's a good movie on.*) This, in my opinion, is simply a variant of the epistemic use of the conjunctions – the only difference being that the verb of the ellipted proposition is not a verb of mental attitude but a verb of saying (*I ask you ...* in Sweetser's example). For a more detailed discussion of Sweetser's analysis of *because* and of the relation between root and epistemic modality, see Larreya 2001b: 110–114.
3. What I call *problematic modality* is what is traditionally considered the core, or perhaps the whole, of epistemic modality. As regards the “futurity” uses of *will* or *shall*, there is wide variation in the literature: for some scholars, they are epistemic, and for others futurity constitutes a category of its own. What I will try to show is that these uses are part of the domain of implicative modality.
4. Logicians generally insist that the cause-consequence relation and implication are two different concepts, which must not be confused. This, however, should not deter linguists from using causality and implication as *linguistic* concepts. The implicative relation of language, in particular, is in several respects very different from the implication of formal logic, and the causal relation is one of the forms that it can take.
5. The main markers of explicit implication are *HAVE TO*, the negation of *NEED* and the negation of *CAN* (as in *You can't have your cake and eat it* – which merges implicative and root modality).
6. Concerning the English modal *WILL*, the claim made here is that, in all of its uses, it expresses a relation of implication whose antecedent is unexpressed. Among the various arguments in favour of this claim (developed in Larreya 1984 and 2001a), I will mention two: (i) the *WILL* v. *BE GOING TO* opposition [as in Palmer's (1974: 164) famous example *Don't sit on that rock. It'll fall/It's going to fall*] clearly shows the implicative nature of *WILL*, which contrasts with the non-implicative nature of *BE GOING TO* (which cannot, for

instance, express characteristic behaviour); (ii) it is significant that the use of *WILL* (or of *SHALL*) as a marker of futurity is impossible (or at least restricted) in any subordinate clause that is semantically linked to its superordinate clause by a relation of implication and constitutes the antecedent of that relation, as in *I'll do what I (*will) like*, *The more you (*will) drink the thirstier you'll be*, etc.

7. The *a priori* v. *a posteriori* opposition will be discussed in section 2.
8. Tellier 1962: 107; the quotation is from Alfred's translation of *Cura Pastoralis*. An even clearer example is the following (dated c. 1225), quoted by Visser (1969: 1682): *Hund will in at open dure* ["A dog will enter (the house) if the door is open"].
9. *Ic sceal*, however, did not necessarily express a promise. It could also express, for instance, "constative" (and therefore factual) obligation, as in *ælcæ dæg ic sceal erian fulne æcer oppe mare* ("each day I have to plough one full acre or more" – Ælfric's *Colloquy*). For a discussion of "promissory *I shall*", "promissory *I will*" and their relation to obligation and volition, see (for instance) Visser 1969: 1603–1605.

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‘Not-yet-factual at time *t*’: a neglected modal concept

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1. Introduction¹

Some hypothetical ‘possible worlds’² can be characterized in terms of a modal concept which has been neglected in the literature on modality, viz. the idea that the world in question is envisaged by the speaker but not yet factual at the time *t* to which it is anchored. This kind of hypothetical world, which we will refer to as ‘*not-yet-factual at t*’ is evoked by any expression that has posteriority as part of its meaning. The clearest cases are those in which the reference is to a future world. Thus, *John will take the exam tomorrow* evokes a world which is subjective in the specific sense that it is not-yet-factual at *S* (= speech time). (It follows that the situation that is temporally located in that future world by the future tense is also not-yet-factual at *S*.)³

Apart from drawing attention to the existence of not-yet-factual worlds (which are hypothetical worlds and should therefore be treated in any comprehensive discussion of modality), this article aims to show that the value ‘not-yet-factual at *t*’ pertains not only to situations that are located in the future (and situations that are represented as posterior to a past reference time), but also to the situations referred to in sentences like the following:

- (1a) [*It’s high time*] *we left*. (The situation of our leaving is envisaged at the time of speech, but is not yet a fact at that time.)
- (1b) [*I wish*] *Jim would stop lying*. (The situation of Jim ceasing to lie is not yet a fact at speech time, but is envisaged at that time as being weakly possible in the future.)
- (1c) [*I saw Sam*] *before she had seen me*. (= ‘I saw Sam at a time when she had not yet seen me’, ‘When I saw Sam, it was not yet a fact that she had seen me’)

In sum, the main purpose of this article is to have a closer look at the factuality values that a situation can have in a possible world. We will argue that there are four: factual, counterfactual, hypothetical and not-yet-factual. As we will see, this has important consequences for the definition of modality: we will conclude that modality can apparently be identified with ‘nonfactuality’.

The following are the main observations and claims on which the analysis rests:

- (a) We will use *situation* as a cover-term for anything that can be expressed by a verb phrase. According to Lyons (1977), a situation is either a state, an action, a process (= change, development) or an event (= a nonagentive dynamic situation, e.g. a fall). The term *actualize* will be used as a cover-term for all the verbs that are typically associated with a kind of situation. The sentence *The situation is actualizing* can thus be said of a state that is holding, an action that is being performed, a change that is taking place or an event that is happening.
- (b) A ‘possible world’ is always a *t-world*, i.e. a world which is anchored to a given time *t*. This means that it is possible for a tensed proposition to be true at one time but false at another, in other words, that it may be true of one *t-world* but false of another. Thus, *J.F. Kennedy is the President of the U.S.* is true of any world holding at (= anchored to) some time in the course of 1961 but is false of the ‘objective’ *S-world*, i.e. the actual world holding at speech time – see section (d) below. By contrast, omnitemporal situations (referred to by generic or universal sentences like *A horse is an animal*) are factual in every objective world holding at any possible time.

The unmarked form of *t*-anchoring is *S*-anchoring (where *S* means ‘speech time’). If the world referred to is an *S-world* and the sentence referring to it is in the present tense, no anchor time needs to be specified in the sentence, nor in its context. This explains why *The weather is nice* is fully interpretable in isolation: The hearer assumes that the speaker presents the sentence as true at *S*. It also explains why omnitemporal situations are as a rule referred to in the present tense: This follows naturally from the fact that *S* is one of the times at which the situation is factual and is the unmarked anchor time.

- (c) There is no essential difference between saying that a tensed proposition is ‘true of’ (Lyons 1977: 687) a particular t -world and saying that the actualization of the situation represented by the tensed proposition is ‘factual in’ that world. Thus, if the tensed proposition *John is walking home* is true of (= true with reference to) the objective S -world (= the actual world holding at S), the actualization of the situation (i.e. the performance of the action) is factual in that world. If the untensed proposition ‘John be walking home’ is not true of the objective S -world, as in [*I wish*] *John was walking home*, the actualization of the situation is not factual in the objective S -world, i.e. it does not belong to the actualizations making up the objective S -world. In that case *John is walking home* is true of a counterfactual S -world, which means that the actualization of the situation is factual in that counterfactual S -world. (As will become clear from paragraphs (e) and (j), similar conclusions can be drawn in connection with sentences in the past tense or future tense.)
- (d) We need to distinguish between ‘objective’ and ‘subjective’ t -worlds. An *objective* t -world is the unique real world that holds at a given time and which is judged real by an (imaginary) ideal outside observer viewing the world as it is at that given time. A *subjective* (or *intensional*) t -world is an alternative world which is not judged real by such an ideal outside observer but which is conceived of as real by some consciousness at a certain time. Such a t -world consists of the tensed (= anchored in time by their verb form) propositions that are deemed true by the world-creating consciousness at the given time. (That time may or may not be S , i.e. speech time.) Thus, the situation referred to by *Amsterdam lies in Belgium* (which is counterfactual in the objective S -world) is factual in the counterfactual S -world existing in the mind of a speaker who is convinced that this assertion is true at S .
- (e) Another distinction we need to make is that between ‘narrow t -worlds’ and ‘extended t -worlds’. A *narrow t -world* is a t -world comprising all the situations that are actualizing at a given time t . Tensed propositions can only be true of such a world if the tense represents the (actualization of the) situation referred to as simultaneous with t . An *extended t -world* is a world comprising all the situations that are actualizing at t or have actualized before t . Various tenses can be used to represent the actualization of a situation as factual in an extended t -