Introduction

This is a book about semantic theories of modality. I am not too comfortable trying to define modality, but a definition provides a useful place to start: modality is the linguistic phenomenon whereby grammar allows one to say things about, or on the basis of, situations which need not be real. Let's take an example: I say “You should see a doctor.” I am saying something about situations in which you see a doctor; in particular, I am saying that some of them are better than comparable situations in which you don’t see a doctor. Notice that what I say can be useful and true even though you do not see a doctor. Thus, what I say concerns situations which need not be real.¹

This definition does not make plain exactly which features of language are associated with modality. For example, is the past real? That’s a hard question, and if the past is not real, according to the definition the past tense counts as a modal expression. Another example: what is it to be kind? I help those around me with a feeling of happiness in my heart. But my life is easy, and acting this way does not lead to any difficulties in my own life. Is this enough to make me kind? Or does kindness also require that I would continue to help, with that feeling of happiness in my heart, even if doing so were to lead to difficulties for myself? If the latter, the word kind involves modality. It seems that modality is not something that one simply observes, but rather something that one discovers, perhaps only after careful work.

As a practical matter, the right way to discover modality is to begin with some of the features of language which most obviously involve modality, to understand these as well as possible, and then to see whether that understanding is also fruitful when applied to new features of language. In semantics, this strategy has proceeded by first

¹ Some, like David Lewis (1986b), would say that the situations in which you see a doctor are real, but not actual. I don’t mean to make a distinction between what’s real and what’s actual here. My goal is just to convey what modality is as clearly as possible.
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studying certain auxiliary verbs like must, certain adverbs like maybe, and certain adjectives like possible, since the meanings of these obviously have to do with situations that are not real. Semanticists then develop theories of these words and the constructions they occur in, and finally they see whether these theories are useful in understanding the meanings of other words, phrases, and constructions. To the extent that the theories in question—let’s call them semantic theories of modality—also contribute to a better understanding of new phenomena, we learn that those phenomena involve modality as well.

After decades of research, linguists have identified very many modal words, phrases, and constructions. (Of course, as with any scientific enterprise, almost any conclusion is subject to revision. We might have made a mistake in calling something modal, and all we can do at any point in time is to apply our best judgment.) In the remained of this chapter, I am going to do some initial work listing and classifying the various expressions of modality.

An important traditional way of classifying varieties of modality is into the categories of epistemic and deontic. Epistemic modality has to do with knowledge, as in (1a), while deontic modality has to do with right and wrong according to some system of rules, as in (1b):

(1) (a) John must be sick.
   (b) John must apologize.

Notice that the same word, here must, can be epistemic in one case and deontic in another. It turns out that the division of modals into epistemic and deontic categories is much too simple. For example, (2) is about neither knowledge nor rules:

(2) If you like chocolate, you simply must try this ice cream.

We’ll see various improved classifications based on the epistemic/deontic distinction in Chapters 3 and 4.

Another way of dividing up the modal forms is into the following three categories:

1. Sentential modality is the expression of modal meaning at the level of the whole sentence. This includes the traditional “core” modal expressions: modal auxiliaries and sentential adverbs like maybe. Syntactic theories place elements expressing sentential modality above the level of the predicate, for example in IP or CP (or the corresponding structures in other theories). Some readers
may find it useful to compare with the more common term “sentential negation,” since I am aiming for a similar concept.

2. **Sub-sentential modality** is the expression of modal meaning within constituents smaller than a full clause, for example within the predicate (e.g., by verbs) or modifying a noun phrase (e.g., by adjectives). There is some slippage between this category and sentential modality. Although the adjective *possible* is technically a representative of sub-sentential modality, the structure *It is possible that S* is often discussed alongside expressions of sentential modality. The reason for this is that semanticists often assume that the semantic relationship between *possible* and its complement clause is identical to that between a modal auxiliary such as *may* and the *may’s own clause*. That is, it is assumed that both can be schematized as *MODAL+S*, and that it’s not important whether there is a clause boundary between the modal and S.

I also include verbal mood (in particular, the indicative and subjunctive) within sub-sentential modality, since contemporary theories view mood as largely determined by sub-sentential modality higher up in the structure. For example, in many languages a sentence of the form *It is possible that S* will require that S has a subjunctive form, and the reason that the subjunctive is needed here has to do with the kind of modality expressed by *possible*.

3. **Discourse modality** is any contribution of modality to meaning in discourse which cannot be accounted for in terms of a traditional semantic framework. Since the vast majority of work on the semantics of modality builds on a truth-conditional approach to sentence meaning, we may tentatively say that discourse modality is any modal meaning which is not part of sentential truth conditions. One of the major themes of Chapter 4 is that many sentential modal elements also involve discourse modality. There are also important connections between sub-sentential modality and discourse modality; for example, the choice of verbal mood in root sentences (typically indicative, but sometimes the subjunctive or some other mood) is dependent on the role which that sentence has in the discourse.

This book will focus on theories of sentential modality. I do not privilege sentential modality because I think it is somehow more important or more central to our understanding of modality generally. In fact, this
book was originally planned to be about all three types. But it turned out to be impossible to discuss all three with enough detail to be useful, and so the project was split in half. This book is primarily about sentential modality, and a subsequent one, Mood (Portner, forthcoming), will examine theories of sub-sentential and discourse modality. Though the present book is primarily about sentential modality, it will examine sub-sentential and discourse modality wherever necessary. In particular, Chapters 4–5 have a lot to say about sub-sentential and, especially, discourse modality. Nevertheless, a proper discussion of these topics will have to await the later work.

Given this somewhat principled and somewhat pragmatic delineation of my subject matter, let us turn to a (necessarily partial) catalogue of linguistic phenomena which appear to involve modality. Unless otherwise noted, I discuss all of the types of sentential modality mentioned below in this book, and none of the types of sub-sentential or discourse modality.

1. Sentential modality
   (a) Modal auxiliaries: must, can, might, should, and the like.
   (b) Modal verbs: The semi-modals of English (e.g., need (to), ought (to)) and verbs in other languages which do not meet the criteria for being an auxiliary in the English sense (e.g., Italian potere “can/may”, dovere “must”), provided that their proper syntactic analysis places them above the level of the predicate. (If any language has modal verbs which reside in the core predicate, in the manner of an ordinary lexical verb, they will be included in the category of sub-sentential modality.)
   (c) Modal adverbs: maybe, probably, possibly, and so forth.
   (d) Generic, habitual, and individual-level predicates:
      i. Generics: A dog is a wonderful animal.
         GENERIC sentences have to do with the characteristics which are associated with the members of a group (dogs in this example). They come in several varieties, and only some of them will come into the discussion here. See Krifka et al. (1995) for a useful overview.
      ii. Habituals: Ben drinks chocolate milk.
         HABITUAL sentences have to do with what the characteristic behaviors of an individual. Krifka et al. (1995) provide a useful introduction to habituals. I do not discuss habituals
explicitly here, but they are very similar to the type of generic which I do discuss.

iii. Individual-level predicates: *Noah is smart.*

An individual-level predicate denotes a stable property, as opposed to a property derived from a time-bounded occurrence (see Milsark 1977; Carlson 1977; a predicate which is not individual-level is stage-level.) Chierchia (1995b) argues that such predicates introduce genericity, and so they are modal if generics are. I don’t discuss individual-level predicates here, but if Chierchia is right, the analysis of generics applies to them.

(e) Tense and aspect:

i. The future, in particular sentences with *will.*

ii. The use of the past to express “unreality”, as in *Even if Mary stayed until tomorrow, I’d be sad.*

iii. The progressive: *Ben is running.*

iv. The perfect: *Ben has eaten dinner.*

(f) Conditionals (*if..., (then)...sentences*). Because they are such a complex topic, and because good guides already exist for the philosophical part of the literature (Edgington 1995, 2006, Bennett 2003) I will not discuss conditionals at length. I do mention their place in one important theory of modality in Chapter 3, and discuss their relation to modality more generally in Section 5.2.

(g) Covert modality: *Tim knows how to solve the problem.*

A sentence which expresses modal meaning, even though it seems that no overt material in the sentence expresses that meaning, can be said to display covert modality. The example above, from Bhatt (1999, (1a)), exemplifies covert modality because it means “Tim knows how he can solve the problem.”

Generics and habituals can be seen as representing covert modality as well, but the term is usually applied to examples with infinitives. I do not discuss such cases here; see Bhatt’s work for details.

(h) There are many linguistic constructions which have been proposed to involve modality as part of their meaning, but for which this conclusion is not generally accepted. An example at the sentential level is disjunction (e.g., Zimmermann 2000). When they build on the theory of modality, but have not
contributed to it in a significant way, I won't discuss such cases here.

(i) When we look at semantic work on languages which have not received a great deal of study from linguists, it becomes apparent that we do not know all of the types of modal meaning. See, for example, Inman (1993) and H. Davis et al. (2007). (A similar point can be made about sub-sentential modality; see Tonhauser 2006, for example. Cross-linguistic work has been more central in the study of discourse modality, especially evidentiality.) I hope that the present book, by elucidating the theory of modality generally, proves helpful to students wishing to study such topics. However, the recent interesting work in this area is too diverse to cover thoroughly in a book of this kind.

2. Sub-sentential modality
   (a) Modal adjectives and nouns: possible, necessary, certain, possibility, and so forth.

   Though these do not technically involve sentential modality, as mentioned above they are usually analyzed along with sentential modals. In this book, I generally follow this standard practice, though I also make some comments on special issues which relate to these forms in Section 3.1.3.

   (b) Propositional attitude verbs and adjectives: believe, hope, know, remember, certain, pleased, and many others.

   Certain occurs in this list and the preceding one. In the form It is certain that . . ., we'd call it a modal adjective; in the form John is certain that . . ., a propositional attitude adjective. The difference is in whether the sentence mentions an “attitude holder,” here John.

   Since Hintikka (1961), the tools of modal logic, in particular the semantics for modal logic based on possible worlds, has been applied to a range of propositional attitude verbs.

   (c) Verbal mood, in particular the indicative and subjunctive.

   Verbal mood is usually analyzed as being grammatically dependent on modality—typically sub-sentential or discourse modality—expressed elsewhere in the sentence. Verbal mood will be discussed briefly in Section 5.3.

   (d) Infinitives. Infinitives were mentioned above as involving covert modality. They also sometimes behave in a way very similar to verbal mood (see Portner 1997).
Dependent modals. Sometimes a sentential modal, e.g. a modal auxiliary, functions in a way similar to verbal mood, for example, *I’d be surprised if David should win.* Such dependent modals will be discussed briefly along with verbal mood.

Negative polarity items. Negative polarity items (NPIs) are words and phrases which cannot occur freely, but rather must be licensed by another element, canonically negation, elsewhere in the sentence. For example, *David will *(not) ever leave.* While there are many theories of NPIs in the literature, one of them (Giannakidou 1997, 1999, 2007) argues that they are dependent on modality expressed elsewhere in the sentence in a manner closely related to verbal mood.

3. Discourse modality
(a) Evidentiality. While evidentiality may be defined in functional terms as a speaker’s assessment of her grounds for saying something, when semanticists study evidentiality they typically are interested in a narrower topic, the meanings of functional elements (for example, a closed set of affixes) which express evidential meaning. Some scholars have argued that evidentiality is a kind of sentential modality, while others treat it, in effect, as discourse modality. Evidentiality is discussed several times in this book, in particular in Sections 4.2.2 and 5.3.

(b) Clause types. Every language has sentences which are conventionally associated with the functions of asserting a proposition, asking a question, or requiring that someone perform or refrain from an action. These are the declarative, interrogative, and imperative sentences, respectively. These categories, and sometimes others as well, are known as clause types or sentence types. I briefly discuss sentence types in Section 5.3.

(c) Performativity of sentential modals. Some sentential modals have discourse-oriented components to their meanings which cannot be derived from their basic sentential semantics. I label this property performativity, and it constitutes a major theme of Chapter 4.

(d) Modality in discourse semantics. Studies of sentential and sub-sentential modals have provided important insights into the nature of discourse meaning. Most prominently, several scholars including Roberts (1987, 1989) have studied modal
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Modal subordination is a pragmatic phenomenon in which one sentence involving (sentential) modality affects the interpretations of subsequent modal sentences. For example: *John might go to the store, he should buy some fruit,* where the second sentence means “If he goes to the store, he should buy some fruit.”

That’s a lot to cover, even in two volumes, so I won’t waste any more words on the introduction.

Modal subordination might not fall perfectly under the definition of discourse modality, since its effect is on truth conditions. But it is an open question whether it is an effect on sentential truth conditions (in context), as opposed to an effect on the truth conditions of the discourse of which the modal sentences is a part. In other words, the issue is whether it is the result of “ordinary” context dependency, or whether it comes about essentially through the rules which interpret discourses.