16.2: The range of modal meanings: strength vs. type of modality

As we noted in Chapter 14, modality can be thought of as an operator that combines with a basic proposition \( p \) to form a new proposition \( \text{It is possible that } p \) or \( \text{It is necessarily the case that } p \). The range of meanings expressible by grammatical markers of modality varies along two basic semantic dimensions.\(^1\) First, some markers are “stronger” than others. For example, the statement in (1a) expresses a stronger commitment on the part of the speaker to the truth of the base proposition \( \text{Arthur is home by now} \) than (1b), and (1b) expresses a stronger commitment than (1c).

(1) a. Arthur must/has to be home by now.
    b. Arthur should be home by now.
    c. Arthur might be home by now.

Second, it turns out that the concepts of “possibility” and “necessity”, which are used to define modality, each include a variety of sub-types. In other words, there are several different ways in which a proposition may be possibly true or necessarily true. The two which have been discussed most extensively, epistemic vs. deontic modality, are illustrated in (2–3).

(2) a. John didn’t show up for work. He must be sick.
    [spoken by co-worker; Epistemic]
    b. John didn’t show up for work. He must be fired.
    [spoken by boss; Deontic]

(3) a. The older students may leave school early (unless the teachers watch them carefully).

b. The older students may leave school early (if they inform the headmaster first).

Epistemic modality indicates possibility and necessity relative to the speaker’s knowledge of the situation, i.e., whether
the proposition is possibly or necessarily true in light of available evidence. Deontic modality indicates possibility and necessity relative to some authoritative person or code of conduct which is relevant to the current situation, i.e., whether the truth of the proposition is required or permitted by the relevant authority. Examples (2a) and (3a) illustrate the epistemic sub-type, under which *He must be sick* means ‘Based on the available evidence, I am forced to conclude that he is sick;’ and *The older students may leave school early* means ‘Based on my knowledge of the current situation, I do not know of anything which would prevent the older students from leaving school early.’ Examples (2b) and (3b) illustrate the deontic sub-type, under which *He must be fired* means ‘Someone in authority requires that he be fired;’ and *The older students may leave school early* means ‘The older students have permission from an appropriate authority to leave school early.’

The strength of modality (possibility vs. necessity) is often referred to as the modal “force”, and the type of modality (e.g. epistemic vs. deontic) is often referred to as the modal “flavor”.

### 16.2.1 Are modals polysemous?

Examples (2–3) also illustrate another important fact about modals: in English, as in many other languages, a single form may be used to express more than one type of modality. As these examples show, both *must* and *may* have two distinct uses, which are often referred to as distinct senses: epistemic vs. deontic. In fact, speakers can create puns which play on these distinct senses. One such example is found in the following passage from “The Schartz-Metterklume Method” (1911), a short story by the British author H. H. Munro (writing under the pen-name “Saki”). In this story, a young Englishwoman, Lady Carlotta, is accidentally left behind on a country railway platform when she gets out to stretch her legs. She is mistaken for a new governess who is due to arrive that day to teach the children of a local family:

> Before she [Lady Carlotta] had time to think what her next move might be she was confronted by an imposingly attired lady, who seemed to be taking a prolonged mental inventory of her clothes and looks. “You must be Miss Hope, the governess I’ve come to meet,” said the apparition, in a tone that admitted of very little argument. “Very well, if I must I must,” said Lady Carlotta to herself with dangerous meekness.

“Dangerous meekness” sounds like a contradiction in terms, but in this case it is the literal truth; Lady Carlotta’s novel teaching methods turn the whole household upside down.

As discussed in Chapter 5, this kind of antagonism between the epistemic vs. deontic senses of *must* strongly suggests that the word is polysemous. Similar arguments could be made for *may*, *should*, etc. This apparent polysemy of the grammatical markers of modality is one of the central issues that a semantic analysis needs to address. But in spite of the strong evidence for distinct senses (lexical ambiguity), there is other evidence which might lead us to question whether these variant readings really involve polysemy or not.

First, as we noted in Chapter 5, distinct senses of a given word-form are unlikely to have the same translation equivalent in another language. However, this is just what we find with the English modals: the various uses of words like *must* and *may* do have the same translation equivalent in a number of other languages. This fact is especially striking because these words are not restricted to just two readings, epistemic vs. deontic; several other types of modality are commonly identified, which can be expressed using the same modal auxiliaries. Example (4) illustrates some of the uses of the modal *have to*; a similar range of uses can be demonstrated for...
must, may, etc. (We return to the differences among these specific types in §16.3 below. As discussed below, the term root modality is often used as a cover term for the non-epistemic types.)

(4) [adapted from von Fintel 2006]

a. It has to be raining. [after observing people coming inside with wet umbrellas; epistemic modality]

b. Visitors have to leave by six pm. [hospital regulations; deontic]

c. John has to work hard if he wants to retire at age 50. [to attain desires; bouletic]²

d. I have to sneeze. [given the current state of one’s nose; dynamic]³

e. To get home in time, you have to take a taxi. [in order to achieve the stated purpose; teleological]

Hacquard (2007) points out that the same range of uses occurs with modal auxiliaries in French as well:

It is a robust cross-linguistic generalization that the same modal words are used to express various types of modality. The following French examples illustrate. The modal in (5a) receives an epistemic interpretation (having to do with what is known, what the available evidence is), while those in (5b–d) receive a ‘root’ or ‘circumstantial’ interpretation (having to do with particular circumstances of the base world): (5b) is a case of deontic modality (having to do with permissions/obligations), (5c) an ability and (5d) a goal-oriented modality (having to do with possibilities/necessities given a particular goal of the subject).

(5) a. Il est 18 heures. Anne n’est pas au bureau. Elle peut/doit être chez elle.
'It's 6:00pm. Anne is not in the office. She may/must be at home.'

b. Le père de Anne lui impose un régime très strict. Elle peut/doit manger du brocoli.
'Anne’s father imposes on her a strict diet. She can/must eat broccoli.'

c. Anne est très forte. Elle peut soulever cette table.
'Anne is very strong. She can lift this table.'

d. Anne doit être à Paris à 17 heures. Elle peut/doit prendre le train pour aller à P.
'Anne must be in Paris at 5pm. She can/must take the train to go to P.'

It is somewhat unusual for the same pattern of polysemy to exist for a particular word in two languages. What we see in the case of modals is something far more surprising: multiple word forms from the same semantic domain, each of which having multiple readings translatable by a single form in not just one but many other languages. Normal polysemy does not work this way.

A second striking fact about the modal auxiliaries in English is that the ranking discussed above in terms of “strength” seems to hold across the various readings or uses of these modals. Linguistic evidence for this ranking comes from examples like those in (6–7).⁴ These examples involve the deontic readings; similar evidence can be given for the epistemic readings, as illustrated in (8–9).

https://human.libretexts.org/Bookshelves/Composition/Advanced_Composition/Book%3A_Analyzing_Meaning_-_An_Introduc…
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(6) a. You *should/ought to* call your mother, but of course you don’t *have to*.

b. #You *have to* call your mother, but of course you *shouldn’t*.

(7) a. I *should* go to confession, but I’m not going to.

b. #I *must* go to confession, but I’m not going to.

(8) a. Arthur *should* be home by now, but he doesn’t *have to* be.

b. #Arthur *must/has to* be home by now, but he *shouldn’t* be. (bad on epistemic reading)

c. Arthur *might* be home by now, but he doesn’t *have to* be.

d. #Arthur *must/has to* be home by now, but he *might* not be. (bad on epistemic reading)

(9) a. #Arthur *must/has to* be home by now, but I consider it unlikely. (bad on epistemic reading)

b. #Arthur *should* be home by now, but I consider it unlikely. (bad on epistemic reading)

c. Arthur *might* be home by now, but I consider it unlikely

Evidence of this kind would lead us to define the following hierarchies for epistemic and deontic modality. What is striking, of course, is that the two hierarchies are identical. Again, this is not the type of pattern we expect to find with “normal” polysemy.

(10) a. Epistemic modal strength hierarchy:

>necessity > possibility

*must/have to* > *should/ought to* > *may/might/could*

b. Deontic modal strength hierarchy:

>obligation > permission

*must/have to* > *should/ought to* > *may/might/could*

The challenge for a semantic analysis is to define the meanings of the modal auxiliaries in a way that can explain these unique and surprising properties. In the next section we will describe a very influential analysis which goes a long way toward achieving this goal.

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1 Hacquard (2011).

2 Example (4c) is adapted from Hacquard (2011). Von Fintel (2006) offers the following definition: “Bouletic modality, sometimes boulomaic modality, concerns what is possible or necessary, given a person’s desires.”
Von Fintel uses the term circumstantial modality for what I have called dynamic modality. Huddleston & Pullum (2002: 178) define dynamic modality as being “concerned with properties and dispositions of persons, etc., referred to in the clause, especially by the subject NP.” The most common examples of dynamic modality are expressions of ability with the modal can. The term circumstantial modality has a more general usage, as discussed below.