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Mood and modality in English

Ilse Depraetere & Susan Reed

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Abstract

This chapter is focussed on the main markers of modality in English, that is, modal verbs. We first give a definition of modality and mood and briefly discuss the different forms used to express modality. We then outline the formal properties of modal auxiliaries and the way in which these properties may lead to a classification of some verbs as more central to the category of modal auxiliary than others. The main part of the chapter is focussed on the meanings of modal verbs, and the different taxonomies that have been proposed in the empirical literature of ways to categorize modal meanings of possibility and necessity. In the course of the discussion, we pinpoint some key questions that have been and still are sources of debate in the field.

Keywords

modal verbs, epistemic meaning, deontic meaning, root meaning, dynamic meaning, time reference of modal verbs, taxonomies of modal meaning, polysemy, indeterminacy

Mood & modality in English¹

1. Introduction

Modality is an area of meaning that is often defined by example: the term ‘modality’ is a cover term for a range of semantic notions such as ability, possibility, hypotheticality, obligation and imperative meaning. This is a serviceable definition for practical purposes. If, however, we wish to provide a more theoretically useful definition, we need to find what it is that all modal utterances have in common. This turns out to be by no means evident. (cf. e.g. Krug, 2000, pp. 39-43, Portner, 2009) What, for example, does the imperative mood, whose prototypical function is to convey a command, have in common with the auxiliary verb *can* in its meaning of ‘ability’, or the auxiliary verb *might* when it expresses a type of possibility meaning, as in *You might be right about that?* What does the hypothetical meaning of a sentence like *If the dog lost a bit of weight it could use the cat-flap* have in common with the obligation meaning of *You have to pay to get in?*

One feature that is common to all modal utterances is that they do not represent situations as straightforward facts. (cf. e.g. Zandvoort, 1964, p. 395, Declerck, 2011) However, the wealth of literature on modality would seem to suggest that linguists intuitively feel that modality is something semantically far richer than ‘lack of factuality’. We can get nearer to a positive characterisation of modality if we say that modal meaning crucially involves the notions of necessity and possibility (Larreya, 1984; Kratzer, 1991; van der Auwera & Plungian, 1998; Huddleston & Pullum, 2002, p. 173), or rather, involves a speaker’s judgement that a proposition is possibly or necessarily true or that the actualisation of a situation is necessary or possible. But more semantically precise links between such meanings as we mention above are not forthcoming.

In what follows, we shall work on the basis that all modal utterances are non-factual, in that they do not assert that the situations they describe are facts, and all involve the speaker’s comment on the necessity or possibility of the truth of a proposition or the actualisation of a situation. We will return to the discussion of theoretical problems concerning modality in section 4.3.

Modality may be coded in various ways, including verbal inflections, auxiliary verbs, adverbs and particles. The grammatical coding of modal meaning in verb inflections is known as mood. (Thieroff, 2010; van der Auwera & Zamorano Aguilar, 2016). English makes relatively little use of inflectional systems to express modal meanings: the imperative mood is common in English, and there is limited use of the subjunctive mood², but modality in English is primarily expressed by non-inflectional items. These include a variety of elements, including adverbials like *perhaps*, *in all probability* etc., and ‘hedges’ like *I would think (that)* (cf. e.g. Høye, 1997; Krug, 2000; Huddleston & Pullum, 2002, pp. 173-175; Portner, 2009, pp. 2-8). A very important means of expressing modality in English is the set of modal auxiliary verbs such as *can*, *might* and *must*, and a considerable part of this chapter will be concerned with the meanings expressed by these auxiliaries. We will begin, however, with a brief look at mood in English.

2. Inflectional moods

In English, there are usually said to be three inflectional moods: the imperative, the subjunctive and the indicative. The meanings they respectively communicate are captured quite nicely by the labels used by Jespersen (1958, 632): ‘will-mood’, ‘thought-mood’ and ‘fact-mood’. Here we will chiefly be concerned, after a glance at the imperative, with the subjunctive mood.

The unmarked function of an *imperative* utterance is to signal that the speaker wants a certain state of affairs to be brought about (i.e. considers it necessary), and directs the addressee to bring it about:

- (1) *Come* here!
- (2) *Have* some more cake!

The imperative is not marked for tense, being formally realised by the base form of the verb.³

The subjunctive mood creates an intensional domain in the sense that there is reference to a state of affairs that is the case in a possible world, but the speaker does not assert that the state of affairs holds (or held, or will hold) in the actual world.⁴

The traditional labels *present subjunctive* and *past subjunctive* (the latter only existing for the verb *be*) refer more to form than to meaning. The form of the present subjunctive is the base form of the verb, i.e. the same form as is normally used for most persons in the present tense. The past subjunctive is only distinct from the past indicative for first and third persons singular, which are realised by the form *were*.⁵ The terms *present subjunctive* and *past subjunctive* should not be taken to refer to the time reference of the forms in question. The present subjunctive can be embedded in a clause with present, past or future time reference (cf. (5c)). The past subjunctive always refers either to a hypothetical (or 'tentative' – cf. Declerck & Reed, 2001) situation or to a counterfactual situation, but the hypothetical or counterfactual situation may be located in the present, the past or the future:

(3) Jimmie wishes/wished/will wish his girlfriend *were* with him.

The present subjunctive is used in formulaic expressions (cf. (4)), in more or less fixed phrases functioning as conditional clauses (cf. (5a), (5b)) and after expressions (verbs, adjectives and nouns) that express volition (cf. (5c)), the so-called mandative subjunctive. In the latter case, *should* + infinitive is a less formal alternative:

- (4) a. God *save* the Queen
b. If that's how you feel, so *be* it.
c. *Perish* the thought.
- (5) a. You can refer to this at a later date, if need *be*. (Cobuild, ukmags)⁶
b. If truth *be* told, it all sounds a bit earnest. (Cobuild, ukmags)
c. The board desires/ordered/will request that changes *be* (*should be*) made to the plans.

The past subjunctive is used productively in hypothetical (cf. (6a)) and counterfactual (cf. (6b)) conditional clauses and after the verb *wish* (cf. (6c)), but is not used as a mandative subjunctive:

- (6) a. What would you say if I *were* to refuse to go?
b. If she *were* living closer, I'd visit her more often.
c. I wish I *were* in Phoenix now.

The indicative normally represents situations as facts, but the indicative past tense and past perfect can also be used modally, in specific structures, to represent situations as non-factual or counterfactual:

- (7) It would be great if it *rained* tonight.
(8) If only Meg *was/had been coming* with us.
(9) I wish/wished he *had told* me about it.

The past form and the past perfect used with modal meaning do not have past time reference as part of their meaning (though the situations they refer to may be interpreted as located in the past). The past perfect still normally expresses anteriority with respect to a situation, but not necessarily to a past time situation; more importantly, the modal past perfect signals that the situation it refers to did not actualize, is not actualizing or will not actualize, i.e. is counterfactual.

As pointed out in the introduction, modality in English is overwhelmingly expressed by non-inflectional means, principally modal auxiliaries. This observation has led Huddleston (1984) to expand the category of purely inflectional mood to what he calls *analytic mood*, i.e. non-inflectional verbal forms

that establish modal meaning. While *mood* in this way becomes an extremely broad category⁷, this proposal has the advantage of effectively encompassing all the possible verb forms involved in establishing modal meaning.

Although most authors on modality agree that both moods and modal auxiliaries should be included within modality as expressing the possible and the necessary rather than facts, there is no tradition of treating mood and modal auxiliaries together, nor a practice of describing the function they share by means of a common stock of descriptive categories. It is perhaps due to the very large range of forms and meanings involved once the two categories are united that they tend to be dealt with separately. In everyday practice, modality in English is most commonly linked with modal auxiliaries, given the important role, noted above, played by modals in the expression of modality in English. Accordingly, in the next section, we will list the formal characteristics of English modal auxiliaries before we go on to look in section 4 at the meanings that they can express and at ways of categorising modality in English, focusing on what Huddleston calls analytic mood.

3. Analytic mood: formal properties of modal auxiliaries

Traditionally, a distinction is made between central modals (*can, could, may, might, shall, should, will, would, must*) and peripheral or marginal modals (*dare, need, ought*). In addition, we find a group of verbs referred to as semi-modals, quasi-modals, emergent modals or periphrastic modals. This somewhat open-ended category includes *have to, need to, have got to (gotta), be able to, be going to*, but can also include a variety of other verbs such as *be supposed to, be about to, be bound to, want to (wanna)* and *had better*.

The central modals have all the 'NICE' properties that are criterial to the classification of a form as an auxiliary verb. (cf. e.g. Palmer, 1974, pp. 18-25) That is, they have a **negative** form consisting of the auxiliary followed by *not*, they can precede the subject in subject-verb **inversion** (for example in interrogatives), they can occur in '**code**', i.e. they can be used instead of a full lexical verb which has occurred in the context (for example *She will help and so will I*), and they can be used in **emphatic** affirmation (*She probably won't help, but she MIGHT (do)*). This means that unlike lexical verbs they do not require the use of *do* in such contexts. In addition, unlike lexical verbs the central modals are invariable for person and number – they have no third person singular –s form – and have no non-finite forms.

Peripheral modals differ from central modals, in the case of *dare* and *need* because these auxiliaries only occur in non-assertive contexts and in the case of *ought* principally because it takes a *to*-infinitive. Most of the semi-modals are composed of *be X to* and they generally have the NICE properties in respect of the *be* part of their form, but unlike the central and peripheral modals they do inflect for person and number and they have nonfinite forms. In addition, they can co-occur with the central modal auxiliaries (cp. *She may be able to help vs *She may can help*). *Have to* and *need to* are frequently included with the semi-modals on the basis of their semantics, and we shall follow this tradition here. On the formal level, however, it must be acknowledged that there is little justification for their inclusion, as both require *do*-support in NICE contexts (cf. Huddleston & Pullum, 2002, p. 112; Leech et al., 2009).

The following table summarizes the formal basis on which the distinctions are principally drawn (cf. e.g. Quirk, Greenbaum, Leech, & Svartvik, 1985, pp. 136-148; Westney, 1995; Biber, et al., 1999, pp. 483-486 ; Huddleston & Pullum, 2002, pp. 106-114; Leech et al., 2009, pp. 81-98; Leech 2013):

	Central modals	Peripheral modals	Semi-modals
<i>do</i> required in NICE (<i>Negation, Inversion, Code, Emphasis</i>) contexts	-	_ ⁸	_ ⁹
-s for third person singular	-	-	+
non-finite forms	-	-	+ ¹⁰

Table 1: formal characteristics of modals

For reasons of space, we cannot explore in detail the formal behaviour of the different sets of verbs systematically. It is, however, important to add that while the central modals *can, may, shall* and *will* (but not the marginal modals) all have past forms, these do not necessarily indicate past time (cf. e.g. (14), (19)). It is often the case that periphrastic forms have to be used to refer to the past (e.g. *He managed to get (* could get) to the station in time*), and/or that the past form of the modal can only be used with past time reference in a restricted number of contexts (e.g. *He could swim at the age of six*: reference to a state vs. *He is the only one who did not drown: he was able to swim (* could swim) across the lake*: reference to an actualised event). Likewise, the location of modal meaning in the future requires the use of a periphrastic form (e.g. *He will be able to read when he's six.*). (cf. 5.2) Issues of this type are covered in e.g. Declerck (1991a), Biber et al. (1999), Depraetere (2012).

4. Categorisations of modal meanings expressed by analytic mood

4.1. Epistemic vs. non-epistemic (or root) meaning

In English analytic modality, we can make an initial distinction between epistemic and non-epistemic, or root modality. Both types of modality have as their basis the notions of necessity and possibility, but the former deals with the necessity or possibility of the truth (or non-truth) of propositions while the latter deals with the necessity or possibility of the actualisation of situations. *Epistemic* modality reflects the speaker's judgment of the likelihood that the proposition underlying the utterance is true, the epistemic scale of likelihood ranging from weak epistemic possibility (*That may be John*) to epistemic necessity (*That must be John* = 'it is necessary that [that is John] is true' and *That can't be John* = 'it is necessary that [that is not John] is true').

Root modality reflects the speaker's judgements about factors influencing the actualisation of the situation referred to in the utterance. Within root modality we find root possibility, root necessity and two categories that are normally treated separately within root modality, namely ability and volition. Cutting across the root necessity and root possibility categorisation is the category of deontic modality, which includes obligation – a type of root necessity – and permission – a type of root possibility. *Deontic* modality typically refers to 'the necessity or possibility of acts performed by morally responsible agents' (Lyons, 1977, p. 823). Deontic modality also implies an authority, or 'deontic source' – which may be a person, a set of rules, or something as vague as a social norm – responsible for imposing the necessity (obligation) or granting the possibility (permission). Thus *John must go home* means, on a deontic (obligation) reading, something like 'it is necessary for John to go home' plus, for example, 'I oblige John to go home', and *John can go home* means, on a deontic (permission) reading, 'it is possible for John to go home' and, for example, 'the rules permit John to go home'.¹¹

Non-deontic root possibility (sometimes simply referred to as 'root possibility') (*You can get coffee from this machine*) and non-deontic root necessity (*The fish have to be fed every day*) concern possibility and necessity that arise, not via a particular authority but due to circumstances in general. They can be paraphrased simply 'it is possible (for ...) to' (cf. (10), (16)) and, for necessity, 'it is necessary (for...) to' (cf. (23)) or even just 'it is important to' (cf. (32)). Note that non-deontic root possibility differs on the one hand from epistemic possibility and on the other hand (though more arguably) from ability. It differs from epistemic possibility in that it does not imply a speaker's evaluation of how

possible it is that some proposition is true but rather refers to the effect of circumstances on the possibility of actualisation of some situation; it differs from ability in that it refers to possibility arising out of enabling or disabling circumstances outside the subject referent, as opposed to enabling or disabling factors that are entirely internal to the subject referent. (see below) The non-deontic root possibility meaning of *Can you come tomorrow?* can thus be paraphrased by 'is it possible for you to come tomorrow?' plus 'are there any external circumstances preventing you / do external circumstances allow you to do so?'

Finally, we come to ability and volition. These modalities, too, combine the meaning of possibility with the notion of specific factors affecting that possibility. The ability meaning of *Can you climb over that wall?*, can be paraphrased by 'is it possible for you to climb over that wall?' plus 'do you have the physical (and perhaps mental) abilities and / or skills to make it possible?'. The volition meaning of *I'll help you* can be paraphrased by 'It is possible for me to help you' and 'I am willing and intend to do so'.

4.2. Meanings expressed by the central modals

Each of the central modal auxiliaries can be used with more than one meaning. In the survey below, we provide a list of the principal meanings expressed by the central modals.

Can

- (10) [The fact that] John Major *can* become Prime Minister [is] proof enough that class is no longer a barrier. (ICE-GB, S2B-036) (non-deontic root possibility)
- (11) *Can* I hold you and kiss you, here and now? I can't stand this!" "No, my darling, no." (Cobuild, UK books) (permission)
- (12) *Can* you speak any East European languages? (ICE-GB, S1A-014) (ability)

Could

- (13) For example, with the simple digging of a well a large amount of pasture *could* be reclaimed but they had no organisational features to allow for this. (ICE-GB, W1A-012) (non-deontic root possibility)
- (14) There has been recurring speculation that Futura *could* be planning a full-scale bid for Headlam and the latter's directors repeated last October's statement that they have not been informed of Futura's intentions. (epistemic possibility) (ICE-GB, W2C-012)

May

- (15) You never know, I *may* eventually get a full-time job. (ICE-GB, W1B) (epistemic possibility)
- (16) Epilepsy causes movements, sensations and behaviour of many sorts. The fit *may* be limited to an area of the brain and its functions partial epilepsy) or *may* be generalised. (Cobuild, UK books) (non-deontic root possibility)
- (17) *May* I sit down for a minute? (ICE-GB, W2F-018) (permission)
- (18) NO BOOK OR OTHER LIBRARY MATERIAL *MAY* BE TAKEN FROM THE LIBRARY 'S PREMISES. (ICE-GB, W2D-006) (permission)

Might

- (19) I suspect that you *might* be seeking a room in a house of young women in want of nocturnal company. (ICE-GB, W1B-015) (epistemic possibility)

- (20) You said to me once you *might* come to London to visit. (ICE-GB, W1B-008) (epistemic possibility)

Must

- (21) With all the bits of work you've done over the years, your CV *must* be pretty full? (ICE-GB, W1B-001) (epistemic necessity)
- (22) You *must* tell DVLA as soon as you buy a used vehicle. (ICE-GB, W2D-010) (non-deontic root necessity)
- (23) To track environmental change the gene pool *must* be able to: a) maintain and continuously update an adequate reserve of variants [...]; also b) switch between alternative forms of phenotypic expression (...) or flexible phenotypic responses (...) (ICE-GB, W1A-009) (non-deontic root necessity)

Will

- (24) Anyone who has flown over the tropics *will* have seen the persistent pall of smoke which all too often signifies forests on the wane. (ICE-GB, W2B-028) (epistemic necessity)
- (25) Why *won't* anyone believe them? (www) (volition)

Would

- (26) Colubus Columba then prophesied that he *would* become a beggar and that his son *would* run from house to house with a half empty bag and that he *would* die in the trench of a threshing-floor. (ICE-GB, W1A-002) (epistemic)
- (27) *Would* you get the Fairground Attraction album (on CD) for me? (ICE-GB, W1B-002) (volition)

Shall

- (28) We *shall* be away on holiday for a fortnight from Wednesday 29 August. (ICE-GB, W1B-027) (epistemic)
- (29) Rightly, the Government's policy is that the pound *shall* not be taken from our pockets against the will of the people. (ICE-GB, W2E-001) (deontic root necessity)

Should

- (30) You *should* just about get this letter by the time I get home. (ICE-GB, W1B-011) (epistemic necessity)
- (31) Did you know that smiling might make you feel better? Read our article on why you *should* smile to find out even more interesting facts! (www) (deontic root necessity)

Three things should be mentioned here. Anticipating the discussion in section 4.3 somewhat, it should be pointed out that *will* and *shall* (and *would* and *should*) used for prediction (examples (24), (27), (29) and (31)) do not fit as comfortably in the paradigm of 'either possibility or necessity of the truth of a proposition'. Prediction does involve some judgement of likelihood, but it is not clear whether a prediction says that something is 'necessarily' or, rather, 'possibly' the case. As will be pointed out in 4.3., it is a matter of debate whether these uses of *shall* and *will* are modal: the fact that it is hard to describe them in terms of the traditional modal labels is already indicative of their indicative of a difference in their status. Second, whilst the dividing line between deontic possibility (that is, permission) and non-deontic root possibility appears to cause few problems, it seems to us that the dividing line between deontic necessity (obligation) and non-deontic root necessity is considerably more problematic. (see Depraetere, 2015, pars. 27-55) For example: *The Franks did make great efforts*

to try and govern Brittany, so it must be asked what stood in the way of preventing their rule, what were the limiting factors to Frankish control? (ICE-GB, W1A-003). Here there is no authority insisting on the asking, and yet a suitable paraphrase would not be 'so it is necessary to ask what stood in the way of preventing their rule' but rather 'so we are obliged to ask...' or 'this (circumstance) obliges us to ask...'. Third, the examples given do not exhaust the range of modal meanings that each auxiliary can express. Finally, and relatedly, it will be evident from this list that the relationship between modal auxiliaries and modal meanings in English is many-to-many (cf. e.g. Coates, 1983, p. 26): each auxiliary has a range of modal meanings, and a given modal meaning can generally be expressed by more than one of the modal auxiliaries, albeit sometimes with varying shades of meaning or with varying acceptability in certain registers. In section 5, we will return to the question of the multiplicity of meanings expressed by modals and explore in more detail the way in which temporal information is communicated by modals. For detailed discussion of the various meanings of modal auxiliaries, we refer the reader to the in-depth treatments mentioned in the section that deals with further reading, below.

4.3. Approaches to the classification of modal meanings

Partly due to the fact that, in classifying modal meanings, it is possible to use various parameters as criterial to their classification, there exists in the literature a fairly diverse assortment of classifications of modal meaning. Below we outline a few of the recent approaches to classifying modality in English. Coates' (1983) analysis of English modal auxiliaries leads her to a basic two-way split between epistemic modality and root modality. Her examination of corpus examples shows that root modals taken as a whole differ from epistemic modals in systematic ways: root modals have shared semantico-syntactic features, typically, for example, having animate and agentive subjects, and they are linked by similarities in intonation patterns which distinguish them from epistemic modals. (cf. Coates, 1983, p. 21 *et passim*) However, Coates does not merely argue that root modalities are in important ways homogeneous in their difference from epistemic modalities, but also that the various types of root modality should not be grouped into subcategories such as 'deontic' modality. (cf. above) Such subcategorisation, she argues, would obscure the fact that there exist deontic and non-deontic meanings of a single modal auxiliary which form a single spectrum of meaning, rather than being discrete meanings. (cf. 5.1)

Quirk et al. (1985) distinguish between intrinsic and extrinsic modality. This classification cuts across the root-epistemic division. *Extrinsic* modality involves 'human judgment of what is or is not likely to happen' (1985, p. 219) and covers (epistemic and non-deontic root) possibility, (epistemic and non-deontic root) necessity and prediction, whilst *intrinsic* modality involves 'some kind of intrinsic human control over events' (*ibid.*). Deontic modality and volition are categorised together as intrinsic modality. As for ability, the authors note: 'The 'ability' meaning of *can* is considered extrinsic, even though ability typically involves human control over an action' (1985, p. 221). For Quirk et al., an assertion or question about a being's ability to do something implies some sort of judgement about the likelihood of actualisation of the situation, and it is this aspect of ability meaning that informs their categorisation of ability as extrinsic¹².

For Bybee & Fleischman (1995, based on Bybee, 1985) (whose approach, in fact, is a broad cross-linguistic one, rather than one concerned purely with English modality), the division used in Coates' (1983) analysis is essentially the correct one, based on their observation that markers of obligation, desire, ability, permission and non-deontic root possibility 'predicate conditions on an agent with regard to the completion of an action referred to by the main predicate' (1995, p. 6). In contrast, epistemic modality, as Bybee & Fleischman point out, concerns the truth of the proposition as a whole, and rather than relating an agent to an action, it deals with the speaker's commitment to the truth of the proposition. The group of modalities referred to by Coates as 'root' modality are referred to by Bybee & Fleischman as *agent oriented* modality, in order to reflect the shared semantic feature on which their categorisation is based.¹³

Palmer (2001) distinguishes between *propositional* modality, which is concerned with ‘the speaker’s attitude to the truth-value or factual status of the proposition’, and *event* modality, which is concerned with whether or not the event referred to in the utterance can or must be realised. Propositional modality subsumes *evidential* and *epistemic* modality, the essential difference between these being that ‘with epistemic modality speakers express their judgments about the factual status of the proposition [*John may/must/will be in his office*], whereas with evidential modality they indicate the evidence they have for its factual status’ (Palmer, 2001, p. 8). Within event modality, Palmer distinguishes between *dynamic* modality, which covers ability and volition, and *deontic* modality, which, as usual, accounts for permission and obligation. Dynamic modality ‘comes from the individual concerned’, that is, from the subject referent, whilst deontic modality comes ‘from an external source’ (2001, p. 10). Palmer also points out that ability sometimes has to ‘be interpreted more widely’, in the sense that the circumstances that affect the subject’s physical and mental powers also need to be taken into account. The effect of circumstances in general upon the possibility or not of a situation’s actualising is accounted for by Coates (cf. above) as non-deontic root possibility rather than as part of ability, on the basis of the fact that such circumstance-affected possibility is not associated with many of the semantic and syntactic features which are associated with ability meaning. However, non-deontic root possibility is not recognised as a distinct area of meaning by Palmer.

Huddleston & Pullum (2002), like Palmer (1990), make a three-fold distinction between epistemic, deontic and dynamic modality. The category of dynamic modality covers ability, volition and non-deontic root modality. Huddleston & Pullum’s categorisation differs from Palmer (2001) in having no superordinate category (equivalent to ‘root’) that includes dynamic and deontic modality. In other words, non-deontic root possibility, ability and volition are not presented as (nontrivially) more closely related to permission and obligation than they are to epistemic modality.

In van der Auwera & Plungian (1998), whose aim is to provide a general account of modal meaning across languages, modal meaning is restricted to those ‘semantic domains that involve possibility and necessity as paradigmatic variants’ (1998, p. 80). Their account places willingness (and non-inferential evidentiality, as in German *Er soll krank sein* (*He is said to be ill*)) outside the range of what is meant by ‘modality’. The authors start from the distinction between modal meaning that has scope over the whole proposition and modal meaning that concerns ‘aspects internal to the state of affairs that the proposition reflects’ (1998, p. 82). The basic distinction is thus one between epistemic and non-epistemic modality, the latter category consisting of participant-internal and participant-external modality. Participant-internal modality involves possibility and necessity that ‘is internal to a participant engaged in the state of affairs’ (1998, p. 80); it covers what is called *ability* (with human or non-human subjects), *dynamic possibility* and *capacity* by others, and also some cases of what others refer to as *necessity*, namely examples such as *Boris needs to sleep ten hours every night for him to function properly*. Participant-external modality implies reference to circumstances external to the ‘participant engaged in the state of affairs and that make the state of affairs either possible or necessary.’ Non-deontic root possibility and deontic modality (since ‘circumstances’ can also concern the will of another person or a norm (1998, p. 81)) are covered by participant-external modality.

In an attempt to arrive at a clearer distinction between those root possibility categories that are not ability and not permission, Depraetere and Reed (2011) use three criteria: (a) the scope of the modality, (b) the source of the modality, (c) the concept of potential barrier. This results in 5 categories: (a) ability (*Tom can cook well*), (b) opportunity (*We can buy a ticket at the station*), (c) permission (*You can leave now*), (d) general situation possibility (*This paint can deteriorate under strong light*) and (e) situation permissibility (*Dogs may be kept in the owner’s room*).

	ability	opportunity	permission	general situation possibility (GSP)	situation permissibility
scope	narrow	narrow	narrow	wide	wide
source	internal	external	external	external	external
potential barrier	- potential barrier	- potential barrier	+ potential barrier	- potential barrier	+ potential barrier

Table 2: taxonomy of non-epistemic possibility in Depraetere and Reed (2011)

In the first three categories, the modality has narrow scope in that it predicates a property of the subject referent (*Cats can see in the dark = Seeing in the dark is something that it is possible for cats to do*); in the case of GSP and situation permissibility, it is the entire situation that is in the scope of the possibility. (*Cracks can appear overnight = the situation of cracks appearing is possible*) If the source lies within the subject referent, it is internal; in all the other cases, it is external. When the source of the modality potentially functions as a barrier to actualization, Depraetere and Reed argue that the result is permission or permissibility meaning.

Depraetere (2014, p.172) applies the same set of criteria to root necessity, with the exception of 'potential boundary', as it is intrinsically incompatible with the idea of root necessity, the very aim of which is to bring a situation about. This results in the identification of three categories of root necessity meaning: (a) narrow scope internal necessity (*If you must put it like that*), (b) narrow scope external necessity (*All sea-snakes must surface to breathe*), (c) (wide scope) general situation necessity (*Sanctions must go*).

	narrow scope internal necessity	narrow scope external necessity	general situation necessity (GSN)
scope	narrow	narrow	wide
source	internal	external	external

Table 3. Taxonomy of non-epistemic necessity

Table 4 below provides a (slightly simplified) summary of the classifications discussed above:

epistemic modality	root necessity (non-deontic)	root possibility excluding ability and volition (non-deontic)	ability	obligation (deontic necessity)	permission (deontic possibility)	willingness or volition	or				
epistemic	root							Coates (1983), Declerck (1991a)			
Extrinsic				Intrinsic				Quirk et al. (1985)			
epistemic	n/a		agent-oriented					Bybee & Fleischman (1985)			
propositional	n/a		event modality					Palmer (2001)			
evidential	epistemic		dynamic	deontic			dynamic				
epistemic	Dynamic			deontic			dynamic	Huddleston & Pullum (2002)			
epistemic	N S I N	N S E N	G op- por- tuni- ty	GSP	ability	N S E N	G S N	per- mis- sion	per- missi- bility	n/a	Depraetere & Reed (2011) Depraetere (2014)
epistemic	non-epistemic							n/a	van der Auwera & Plungian (1998)		
	Part	participant-external			participant-internal	participant-external					
	Internal	non-deontic				Deontic					

4.3. Theoretical problems regarding modality and the classification of modal meaning

Modal auxiliaries (including peripheral modals and semi-modals) in English are notably susceptible to evolution, both in terms of their meaning (cf. e.g. Sweetser, 1990; Coates, 1995; Myhill, 1997; Nordlinger and Traugott, 1997; Ziegeler, 2015), and in terms of their grammatical behaviour, which may affect the approximation of peripheral or semi-modals to the status of central modal (cf. Krug, 2000). This variability across time requires care in handling corpus material in the analysis of a given modal. (Leech et al., 2009; Leech, 2013) In addition, the semantic diversity of the meanings that have been classed as modal (cf. section 1) and the somewhat fuzzy boundaries of modality naturally bring some difficulties of analysis with them. Questions arise about, on the one hand, which modal verbs, in which uses, count semantically as modal, and on the other hand, which meanings themselves count as modal. We mention below two of the most common issues regarding the classification of English modal auxiliaries and their meanings.

One well-known debate concerns the question of whether *will* can always be said to be a modal auxiliary or whether in its most frequent use it is no longer modal, with a basic meaning of intention or willingness, but is purely a marker of future tense (cf. (24)) (see e.g. Declerck, 1991b, pp. 8-13; Huddleston, 1995; Larreya, 2000; Salkie, 2010). Another English modal which provides ground for debate is the auxiliary *can*, in various of its uses, most obviously, its ability use.

One use of ability *can* is essentially suppletive to the English aspectual paradigm. (cf. e.g. Leech 1987, p. 25) In the absence of an acceptable progressive form of verbs of inert perception such as *hear*, *see*, *smell* – **I am hearing the sea* – and certain uses of state cognition verbs such as *understand*, English uses *can* plus infinitive instead. Thus, what is literally a statement of ability, *I can hear the sea*, is interpreted more or less directly as equivalent to a progressive interpretation of *I hear the sea*. This use of *can* is often argued to be non-modal.

More controversial is the normal use of *can* with ability meaning. A sentence such as *Tommy can reach the door handles now* may be seen not so much as giving a speaker's judgement about the likelihood of a situation actualising as making a factual statement about Tommy's ability. Palmer (2001, p.179) comments: 'Dynamic ability is less central to modality than deontic permission in that it does not involve the speaker's attitude to the factuality or actualisation of the situation'. Indeed, Steele (1975, p.38, cited in Palmer (1990)) claims that ability *can* is not a modal because it only describes "the potential" of the subject referent rather than the likelihood of the situation (cf. also e.g. Palmer 1986, p. 102; Bache & Davidsen-Nielsen 1997, p. 325; Høye 1997, p. 44). However, Quirk et al.'s classification of ability meaning alongside meanings reflecting 'human judgement of what is or is not likely to happen' (cf. 4.2) gives us a clue to an alternative analysis, one in which asserting or questioning someone's ability to do X is equivalent to an (asserted or questioned) assessment of the likelihood that X will happen. It is arguable that if I say *Tommy can reach the door handles now*, this amounts to a judgement about the likelihood of the subject referent's carrying out the action referred to in the VP: if *Tommy can reach the door handles* then the likelihood is that he *will reach the door handles* at the next opportunity. More recently, Salkie (2016) has argued that *can* communicates *enablement*, which crucially involves causality rather than modality, if the semantic core of modality is non-factuality.

Finally, mention should be made of evidentiality. For some, evidentiality is a category of meaning: "Evidentiality concerns the speaker's indication of the nature (the type and quality) of the evidence invoked for (assuming the existence of) the state of affairs expressed in the utterance." (Nuyts 2001, p. 27). On this view, the verb 'hear' in *I hear Kate passed the exam* is a marker of evidentiality (as well as having, to a variable degree, its meaning as a verb of perception meaning). For others, evidentiality is more narrowly defined as the "grammatical marking of information source" Aikhenvald (2018, p. 1), that is, as a formal category, on a par with tense as the grammatical encoding of time. On this view, evidentiality is not a category which applies to English.

A distinction is often made between direct and indirect evidentiality, depending on whether the speaker has personally witnessed the situation or not. In the latter case, the proposition expressed

may be the result of an inference or involve a reported state of affairs. In English, unlike in certain other languages, evidentiality (on the former of the two definitions above), if it is expressed, is expressed lexically: the speaker explicitly refers to the evidence that is at the origin of the proposition that is expressed. An example of direct evidentiality in English would thus be *She seems tired* and an example of indirect evidentiality would be: *He told me there was a stranger on the opposite side of the street*. There has been considerable debate as to whether evidentiality is another modal category on a par, with, for instance, epistemic modality, or is a type of epistemic modality, or is not a modal category at all. For a brief summary of some of the positions taken, see Whitt (2010, pp. 11-14).

5. Further issues in the meaning of modal auxiliaries

Having defined the categories of modality, we can now return to the multiplicity of meanings of modal auxiliaries, more in particular to the question whether modals are ambiguous or vague with respect to the meaning(s) they communicate. In 5.2, we will focus on the way in which temporal information is communicated by sentences with modal verbs.

5.1. Polysemy vs monosemy

It has become clear in the course of the discussion that most modals can express both epistemic and root meaning: for instance, *must* can be used for epistemic necessity (*You must be cold*) and (deontic and non-deontic) root necessity (*You must stay in*); *may* can express epistemic possibility (*You may be right*) and root possibility, for example permission (*You may come in*). Apart from this, modals also express a variety of meanings in another way: any random corpus of examples containing a particular modal auxiliary (e.g. *must*) used in a particular meaning (e.g. obligation) reveals differences in shades of meaning communicated. In the case of obligation *must*, for instance, obligation may be weak (e.g. 'mere' advice given by the speaker) or strong (e.g. an order imposed by the speaker). (cf. e.g. Coates 1983, p. 34, 39, Huddleston & Pullum 2002: pp. 175-177, 181, 186) The following examples, as far as one can judge them without taking a greater context into consideration, exhibit an increase in strength of the necessity:

- (32) (a) *You must* come and visit us as soon as you can. (ICE-GB, W1B-004)
 (b) I *must* go back to work now. (ICE-GB, W1B-001)
 (c) (mother to child) *You must* take your swimming costume tomorrow, because you have swimming lessons on Wednesday.
 (d) When sons marry fathers *must* give them a proportion of his herd. (ICE-GB, W1A-011)
 (e) *You must* be ordinarily resident in Great Britain (England, Scotland and Wales) and present there at the date of your claim. (ICE-GB, W2D-005)

In fact, corpus examples reveal a great deal of indeterminacy: it is often difficult to pin down the 'meaning' communicated by the modal unequivocally. For the example in (34), for instance, it makes little, if any difference whether we paraphrase this by 'it is possible to double the dose', functioning as a suggestion, or by 'it is permitted to double the dose':

- (33) [The] dose *can* be doubled to last through the night or for long car journeys. (Cobuild, sunnow)

Two questions follow from these observations: (a) Do modals have a core meaning which is present in all their uses (the monosemy analysis) or are the different meanings sufficiently (semantically) independent to allow us to say that a modal is polysemous? (b) For each of the modal meanings communicated by a particular modal, what are its necessary and/or prototypical characteristics? While the two questions are not unrelated, for reasons of space we will have to limit ourselves to a few remarks on the question of polysemy, and refer the reader to the references in the section that deals

with further reading, below for detailed descriptions of the modal meanings communicated by particular modals.

Many linguists defend the idea that modals are polysemous, with at least a sense distinction between root and epistemic meanings of a given modal (cf. e.g. Lyons, 1977; Traugott, 1989; Bybee & Fleischman, 1995; Palmer, 2001; Huddleston & Pullum, 2002). Ambiguous examples constitute major evidence to that effect: in the examples in (35), for instance, it is impossible to decide – out of context – whether the modal has root or epistemic meaning:¹⁴

- (34) a. At the same time he *must* remember one of the principal lessons of Vietnam: that wars cannot be successfully pursued without strong public support. (ICE-GB, W2E-004)
b. You *must* remember this.
c. You *may* have a car. (Hoye, 1997, p.42)

Since both interpretations cannot co-exist, one has to decide which meaning is intended before the sentence can be understood. This observation is taken to be evidence for the fact that root and epistemic meanings are semantically distinct. Other criteria that are used to justify the semantic difference between root and epistemic meanings are: (a) each of them is associated with a number of clear syntactic and semantic criteria (e.g. scope of negation cf. 5.2.1), (b) they have different paraphrases (e.g. root possibility: *it is possible for p*, epistemic possibility: *it is possible that p*).

It is arguable that indeterminate examples are not always ambiguous. Coates (1983, p17), argues for instance, that in (35) the meanings of epistemic necessity and root necessity are mutually compatible. There are clearly two separate meanings involved, but according to Coates, the distinction between epistemic and root necessity is ‘neutralised’, resulting in a case of ‘merger’:

- (35) A: Newcastle Brown is a jolly good beer.
B: Is it?
A: Well it *ought to be* at that price. (Coates, 1983, p. 17)

The fact that indeterminate examples of the kind shown in (34) and in (36) are numerous and do not cause a breakdown in communication is used by ‘monosemists’ to make their case: they argue that each modal has a core meaning, and that it is the contexts in which it is used that determine how it is interpreted, i.e. each modal has one invariant meaning with different contextual uses (cf. e.g. Ehrman, 1966; Tregidgo, 1982; Haegeman, 1983; Klinge, 1993; Groefsema, 1995; Papafragou, 2000).

Most linguists (e.g. Leech & Coates, 1980) argue for a semantic distinction between root and epistemic readings, but do not go as far as claiming that all the meanings communicated by one particular auxiliary are semantically distinct. Others argue that modal auxiliaries may be ambiguous between different root meanings (e.g. Depraetere, 2014). If one argues for a unitary treatment of meaning, the unitary meaning will provide a relatively small base which needs to be considerably enriched so as to find ways of explaining how the multiple interpretations are pragmatically derived. While the polysemy/monosemy question is obviously important, in the end, one is basically pursuing the same aim: that of setting up a taxonomy into which all meanings can be fitted satisfactorily, the difference being that the semantics/pragmatics dividing line is drawn at different points.

5.2. Composition of a modal utterance

5.2.1. Although the phraseology is not always the same, there is general agreement that a sentence with a modal consists of two parts: P and M, i.e. a proposition¹⁵ which represents a particular situation, and a modal meaning. *You may be right about that* can be paraphrased as *It is possible (M) that you are right (P)*. In a similar way, *You can park in front of the garage* is made up of *It is possible (M) for you to park in front of the garage (P)*. A first consequence of this composition is that negation may

bear either on the proposition (*You may / not be right about that*) or on the modal meaning expressed (*You cannot / park your car in front of the garage*). (cf. e.g. Palmer, 1995)

5.2.2. This basic insight is also needed to describe accurately the temporal information that is contained in a modal utterance. A distinction should be made between on the one hand, the temporal location of the modal meaning, for instance, in the case of obligation one might ask, is the obligation located in the past, the present or the future? (cf. *She had to be back by ten* vs. *She has to be back by ten* vs. *She will have to be back by 10*), and, on the other hand, the temporal relation between the modal meaning communicated and the situation referred to, i.e. is there a relationship of anteriority, simultaneity or posteriority between the modal meaning and the situation? (cf. *She may be in her room* (simultaneity: there is a present possibility that she is in her room at present), *She may be back by ten* (posteriority: there is a present possibility that she will be back by ten), *He may have missed his train* (anteriority: there is a present possibility that at some time in the past he missed his train). Although this observation has not gone unnoticed (cf. e.g. Larreya, 1987; Leech 1987, pp. 94-99; Declerck, 1991a), it sometimes lies at the basis of inaccurate wording: what is actually a temporal relation between the modal meaning and the situation is referred to as the temporal location of the modal meaning (cf. e.g. Huddleston & Pullum 2002, p. 182) and a systematic, comprehensive description of the system of temporal location and temporal relations appears to be lacking.¹⁶ To give an idea of the variety of combinations of temporal relations that are possible, we offer the following table for the meaning 'necessity' in English.

Time reference of modality	Type of modality (root/epistemic)	Temporal relation of P to M	Form	Example
present time	root	Anteriority	/	/
		Simultaneity	/	/
		Posteriority	<i>must</i> (etc.) + present inf.	You <i>must be</i> back by 10.
	epistemic	Anteriority	<i>must</i> + perfect inf.	There's a smell of tobacco in here. Someone <i>must have been smoking</i> .
		Simultaneity	<i>must</i> + present inf.	He <i>must be</i> stuck in a traffic jam.
		Posteriority	<i>be bound to /should</i> + present inf.	The truth <i>is bound to come</i> out. The parcel <i>should reach</i> her tomorrow.
past time (direct speech)	root	Anteriority	/	/
		Simultaneity	<i>had to</i> + present inf.	His mum was a teacher and he was her pupil when he was 10. He <i>had to call</i> his mum 'teacher' at school, just like the other kids.
		Posteriority	<i>had to</i> + present inf.	He <i>had to be</i> back by 10.
	epistemic	Anteriority	/	/
		Simultaneity	/	/
		Posteriority	/	/
future time (direct speech)	Root	Anteriority	/	/
		Simultaneity	<i>will have to</i> + present infinitive	Once you are at Eton, you <i>will have to obey</i> your tutor's orders.

		Posteriority	<i>will have to + present infinitive</i>	You <i>will have to be</i> back by 10.
	Epistemic	Anteriority	/	/
		Simultaneity	/	/
		Posteriority	/	/

Table 3: root and epistemic necessity: forms used to express temporal reference and temporal relations

Three general observations may be made concerning this survey. First, as pointed out in 3, not all modals have a past form that locates the modal meaning in the past sector. For example, *must* cannot be used with the meaning past obligation in direct speech. In such cases, other modals, or periphrastic modals, may supply semantic gaps (cf. e.g. He *had to be* back by 10.).

A second observation is that certain modal meanings are inherently incompatible with particular temporal relationships. For example, deontic modality expressed by *must* implies a relationship of simultaneity or posteriority; this means that there is no example of deontic root necessity with anterior P since it is pragmatically impossible to give someone permission or oblige someone to do something in the past. (cf. e.g. Lyons, 1977, pp. 813, 824; Declerck, 1991a, p. 383)

A third, related, observation is that certain modal meanings cannot be located in particular time sectors in direct speech. Epistemic modality by definition entails the making of a judgement about the likelihood that it is true that something is the case. This means that the modality itself must be located at the time of the judgement – either speech time or some implicitly or explicitly evoked speech (or thought) time. This explains why the table has gaps for (direct speech) epistemic modality located in the past or the future. Epistemic modality can be located in the past provided the source of the judgement is some sort of reported speaker (or thinker), that is, provided the sentence is part of some kind of indirect (including free indirect) reported speech or thought. For example *Long John had to have hidden the treasure somewhere* expresses a past epistemic judgement about an anterior situation – the judgement belongs to an implicitly evoked thinker, presented as thinking something like ‘*Long John must have hidden the treasure somewhere*’. Similarly, epistemic modality can only be located in the future when it is explicitly embedded in a future speech-situation and is clearly ‘present modality’ for the reported speaker or thinker, for example: *Hilda will say/think that you must be mad*. In other words, while it is possible to formulate epistemic necessity in the past or in the future, it always features in a context of indirect or free indirect speech.

6. Conclusion

We have seen that the range of meanings covered by the term ‘modality’ is functionally very wide. ‘Modality’ includes meanings such as ability and volition, which tend to characterise the subject referent; permission and obligation, which predicate compelling or permitting external conditions of the subject referent; epistemic possibility and epistemic necessity, which involve a speaker’s confidence (or lack of it) in the truth of a proposition; the subjunctive, which creates possible worlds; and the imperative, which functions directly as a means of influencing the addressee’s actions. Nevertheless, these categories have enough in common for linguists in general to treat the field as a unified one, albeit with a certain amount of variation as to what is included under modality. As far as English modality in particular is concerned, a clause containing a modal auxiliary becomes twin-faceted, providing complex possibilities for the temporal location and/or the negation both of the modality and of the proposition. The area of temporal interpretation of modal utterances in English is one which is yet to be fully researched. Above all, the modal auxiliaries display a suppleness and breadth of meaning, which, in combination with a marked tendency to continuous development, provide an absorbing challenge for current and future analysts.

Suggestions for further reading

Coates' (1983 (2014)) corpus-based analysis remains an excellent starting point for understanding the English modal auxiliaries. She adopts a so-called 'fuzzy set' approach to describe the meanings of the modals: the 'core' of the set represents examples that have all the prototypical features associated with a particular meaning (for example, root necessity). As we move away from the core, into the 'skirt', we encounter examples that share fewer and fewer of these prototypical characteristics¹⁷. Larreya and Rivière (2014, pp. 85-151) is another very rich, corpus-based survey of modal meaning and modals in English. Useful introductions can be also be found in Quirk et al. (1985, pp. 219-239), Declerck (1991a, pp. 360-446), and Huddleston (2002, pp. 175-212). Palmer's books on modals (1979), (1990), (2001) – the last being concerned with modality from a cross-linguistic perspective – belong to the core literature on modals, as do Bybee & Fleischman (1985) and van der Auwera & Plungian (1998), which are also cross-linguistic studies. Nuyts and van der Auwera (2015) is the most recent state-of-the-art of research into mood and modality, outlining a range of different theoretical approaches (functional linguistic, formal syntactic, formal semantic and cognitive) as well as providing a description of modality and mood in different language families.¹⁸ Facchinetti, Palmer, & Krug (2003); Salkie, Busuttil, & van der Auwera (2009); Tsangalidis & Facchinetti (2009); and Marín-Arrese, Carretero, Arús Hita & van der Auwera (2014) are four volumes of papers that address various topics in English modality. The following papers offer analyses of the (recent) diachronic development of the English modals: Brinton (1991), Fischer (2004), Goossens (1987, 1992, 2000), Krug (2000), Kytö (1991), Lowrey (2012), Müller (2008), Nordlinger & Closs-Traugott (1997), Closs-Traugott & Dasher (2002), Warner (1993), Ziegeler (2000). Collins (2009), (2015), Hundt (2012) and Noël (2014) are focused on the use and meaning of modals in different geographical varieties of English. Mair (2015) considers the corpus-based study of modal auxiliaries in different World Englishes and discusses the interaction between regional variation, genre and diachronic trends.

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¹ The variety of English referred to throughout in this chapter is standard British English.

² It has been argued by some authors that the use of the subjunctive is increasing in certain contexts. See, for example, the discussion in Leech, Hundt, Mair & Smith (2009, pp. 51-70).

³ Huddleston & Pullum (2002, pp. 89-90) point out that although the form used in the imperative construction is never tensed, there are grounds for considering an imperative clause to be more like a finite clause than it is like a nonfinite clause.

⁴ We have said above that modal meaning involves the notions of necessity and possibility. Strictly speaking, the subjunctive, as is clear from this description, is not used to express necessity or possibility, but rather shows that the speaker does not assert that the situation referred to is factual. This meaning is, of course, extremely close to those of necessity and possibility. For this reason, and in order to give readers a more comprehensive overview of the formal categories that are commonly included under the heading of ‘mood and modality’ in English, we have chosen to include the subjunctive in our discussion here.

⁵ In this view of the past subjunctive, we follow Quirk et al. (1985). However, both the extent and the existence of the past subjunctive in current English are open to debate. See, for example, the different approach taken in Huddleston & Pullum (2002, pp. 86-8), Aarts (2012).

⁶ Original examples come either from the Cobuild corpus, the ICE-GB (International Corpus of English, British English component) corpus, or the world wide web, and are marked accordingly. Note that disfluencies in the corpus examples have been removed to facilitate reading.

⁷ See van der Auwera and Aguilar (2016) for a historical overview of the denotations of the labels *mood* (*modus*, *mode*) and *modality*, the former term having been used with the meaning of modality as defined in this chapter until the mid 20th century, Lyons (1977), Palmer (1979), Halliday (1970) and Coates having played a major role in this terminological shift.

⁸ Note that *ought* occasionally combines with *do* (cf. Quirk et al., (1985, pp. 139-140)).

⁹ Note that *have to*, unlike the semi-modals constructed with *be*, requires *do*-support in NICE contexts.

¹⁰ The semantics of *had better* and *have got to* make these clear candidates for modal auxiliary status, but their formal classification within modal auxiliaries is more difficult. While they are often classed as semi-modals, this classification is not unproblematic since, for example, they differ from semi-modals (and resemble central modals) in having no non-finite forms, and *had better* differs additionally from semi-modals in lacking third person singular –s. For a discussion of *had better*, see Noël, van der Auwera & Van Linden (2013).

¹¹ For a detailed discussion of the notion of ‘source of modality’, in connection with *should*, *ought* and *be supposed to*, see Verhulst, Depraetere and Heyvaert (2013).

¹² Bolinger (1989) similarly considers that the divide between ‘extrinsic possibility’ and ‘intrinsic possibility’ cuts across the root/epistemic divide insofar as *can* and *may* are concerned. However, his use of these terms is different from that of Quirk et al. For example, neither human judgement nor human control is a factor in his distinction. “*Can* [...] invokes what is immanent, inherent. *May* refers to the external, to what transcends the entity or situation.” (1989, p. 7). The difference in meaning of the terms leads to a different classification of the

meanings of *can* and *may*: Bolinger argues that all uses of *can* are intrinsic possibility and all uses of *may* are extrinsic possibility.

¹³ Bybee & Fleischman also refer to ‘speaker-oriented’ modality, which is expressed by inflectional forms that mark directives, such as the imperative form in English.

¹⁴ Note that these examples differ from that in (34), which is indeterminate between permission and possibility without any suggestion of ambiguity. Cf. Larreya (1983, pp. 25-26) for a very good description of different kinds of indeterminacy.

¹⁵ As is for instance pointed out by Leech & Coates (1979, p. 86), P either refers to the proposition (in the case of e.g. epistemic necessity or epistemic possibility) or to the event indicated by the predicate (in the case of e.g. permission). Cf. also Huddleston (1984, p. 167), Larreya & Rivière (2014, p.86).

¹⁶ Declerck (1991a), Biber et al. (1999), Depraetere (2012) and Depraetere (2017) address some of these issues.

¹⁷ As Coates’ corpus-based analysis shows, prototypical examples are relatively few in number, most examples in her corpus belonging to the skirt.

¹⁸ An example of another approach to the meaning of modal auxiliaries, one based in discourse analysis, can be found in Myhill’s (1997) discussion of the difference in meaning between *shall* and *ought*.