Aspect, tense and modality: theory, typology, acquisition
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4.1 INTRODUCTION
In Chapter 3 the domains of tense, aspect and quantification were discussed. The topic of this chapter will be the domains of modality, evidentiality and irrealis. There is a crucial distinction between the former and the latter domains. Chafe (1995) states that there are:

various paths by which ideas enter consciousness, among them the direct perception of current states and events, the remembering of previously experienced states and events, and the imagining of states and events that are judged not to accord with current objective reality. (p. 349)

Grammatical expressions of tense, aspect and quantification are mainly used for communication about perceptible and remembered events, whereas grammatical expressions of modality mainly concern the communication about imagined states and events. In section 4.2, I will discuss the major subcategories within the domain of modality. I will argue that three parameters are needed, sense, scope and source, to define different categories of modality and I will show that this leads to a sound classification. In section 4.2.5 the areas related to modality, future tense, prospective aspect, irrealis and evidentiality, will be discussed.

4.2 MODALITY
Distinctions in the domain of modality are illustrated in (1)-(4), again concerning the event of Mary writing a letter:

(1) Mary has to write a letter.
(2) Mary could write a letter.
(3) Mary might write a letter.
(4) Mary will be writing a letter.

In (1), it is stated that Mary is somehow obliged to write a letter and in (2), that Mary is able or has the opportunity to write a letter; in (3) the speaker supposes
that there is a possibility that Mary will write a letter; finally, one of the interpretations of (4) is that the speaker predicts that Mary is writing a letter. The examples in (1)-(4) illustrate that the nature of modality can hardly be covered by one general definition; the meanings within the domain are very diverse. There is much controversy about how to define the domain of modality. A rather successful attempt to formulate the general semantics of modality is made by Perkins. He states that ‘human beings often think and behave as though things might be, or might have been, other than they actually are, or were.’ By marking modality, a speaker speaks ‘in terms of ‘things being otherwise” and conceives of something ‘being true or real in some non-actual world, or true or real in some state of the actual world at a point in time other than the present moment’ (Perkins 1983: 6-7).

Another debate concerns the question which meanings should be included in the domain of modality and which ones should not. In this thesis I follow the standard approach in FG that sentence types or basic illocutions (such as declarative, interrogative and imperative) and different moods, such as subjunctive or indicative, are excluded from the domain of modality, since they do not belong to the representational level, but to the interpersonal level (see 2.2). On the other hand, modal expressions that concern characteristics of participants, such as ability or volition, are included in the domain of modality.

Although there is no general agreement on the boundaries of the domain of modality, some modal distinctions are generally acknowledged. First, it is often claimed that modality expresses notions of either necessity or possibility: this opposition will be further elaborated as the parameter sense. Second, a general division in the domain of modality is between epistemic, deontic and dynamic or root meanings: general definitions are that epistemic meanings have to do with the knowledge of the speaker about the truth of the propositional content, as in (3) and (4), deontic meanings have to do with notions of permission and obligation, as in (1) and dynamic meanings with internal characteristics of the participants, as in (2). These distinctions will be refined as the parameter source. Finally, I will add a third parameter, scope, which was defined in 2.1. This notion is much less commonly recognized, although notions like objective, subjective and agent-oriented modality are related to scope. I will show that together with sense and source, scope may account for the specific modal meanings and the close relationships that exist between them.

4.2.1 Sense: potentiality, disposition, weak necessity and necessity
Modal expressions are often used with different meanings. A particular phenomenon is that in very diverse languages, such as Indo-European, Semitic, Philippine, Dravidian, Mayan, and Finno-Ugric, single modal expressions cover
the same meanings (cf. Steele et al. 1981; Sweetser 1990: 49). For example, many languages use a single form for expressing obligation (5) and certainty of the speaker (6), like in English:

(5) You must go now.
(6) You must be joking.

In (5) the participant you is obliged to go, whereas in (6) the speaker is certain that the addressee is joking. The fact that in both cases must is used indicates that there is probably a close semantic relationship between the notions of obligation (or requirement) and certainty. A similar relation seems to exist between permission and possibility. Palmer (2001) rightly asks why both connections exists.

There is no immediately obvious reason why the same forms should be used for expressing the speaker’s degree of commitment to truth and for getting other people to do things. It is by no means obvious that permission is a ‘related notion’ to possibility, or requirement to certainty. (p.98)

A plausible view is that there is one general meaning that is involved in the specific meanings of possibility and permission and that there is one general meaning that is involved in the meanings of obligation and certainty. Most often it is assumed that permission has something to do with possibility—which I will refer to as potentiality—and that obligation and certainty both have to do with necessity. The opposition between potentiality and necessity derives from modal logic (Lyons 1977: 787; Von Wright 1951), but it would be mistaken to speak of a binary opposition between the two. In language there is rather a gradient scale between potentiality and necessity. Perkins (1983) adds a third distinction of disposition, which means ‘with a tendency to …’. Bybee, Perkins & Pagliuca (1994) make a further distinction between necessity and weak necessity. This leads to a gradual scale of senses from potentiality to necessity, which is represented in Figure 4-1:

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1 A term borrowed from Harder (1998).
parts the scale is divided is a language-specific characteristic. There may be less or there may be more than four distinctions. English uses different expressions for the four general senses given in Figure 4-1. Potentality is expressed by *can, could, may* and *might*, and the meaning of these expressions can be paraphrased as ‘not precluding’. Disposition is expressed by *will, would* and *wanna* and the meaning of these expressions can be paraphrased as ‘disposed towards’. Weak necessity is expressed in English by *shall, should, ought to* and *be supposed to*, which can be paraphrased by ‘expected to’. Finally, necessity is expressed by *need to, have (got) to, got to* and *must*. The general sense of expressions that belong to this domain could be paraphrased as ‘forced to’ or ‘entailing’.\(^2\) The expressions for one basic sense differ in formality, politeness, and possible contexts of use. As a matter of fact, the basic sense of a modal expression is only part of the resultant meaning. The basic sense of a modal marker in combination with the two other parameters, source and scope, leads to more specific meanings. First, the source of modality will be addressed.

### 4.2.2 Source: internal, external and epistemic

The second parameter that is needed to describe the semantics of modality is the source of the modality. This is a refinement of the distinction between epistemic, deontic and root or dynamic\(^3\) modality (Bybee 1985; Bybee et al. 1994; Coates 1983; Lyons 1977; Palmer 1986; Perkins 1983; Sweetser 1982). Epistemic modality is ‘concerned with matters of knowledge, belief’ (Lyons 1977: 793), with ‘opinion rather than fact’ (p.681-82), whereas deontic modality ‘is concerned with the necessity or possibility of acts performed by morally responsible agents’ (p.823). Obligation (*must, have to*) and permission (*may, can*) form the major types of deontic modality. The term ‘root modality’ is used by Hofmann (1976), Sweetser (1990) and Coates (1983) to refer to all types of non-epistemic modality, but I will reserve this term for modality which has its source in participant-external, but non-deontic circumstances (see later this section) like in Bybee et al. (1994: 320) and Van der Auwera & Plungian (2001: 84). Another term that is sometimes used for non-deontic and non-epistemic modality is dynamic modality. This term will not be further used in this thesis.

Several authors, among whom Sweetser (1990) and Perkins (1983), have already connected sense and source, although they used different labels for it. Sweetser has formulated the senses of specific modal expressions in English and assumes that they apply to different ‘worlds’, a sociophysical and a world of

\(^2\) The paraphrases for potentiality, disposition and necessity (entailed to) are adopted from Perkins (1983), who used them for specific modal expressions. The paraphrase forced to is adopted from Sweetser (1990).

\(^3\) A term of Von Wright (1951: 28).
reasoning. Sweetser formulates the basic senses for each modal auxiliary in terms of Talmy’s force dynamics (1988a)\(^4\): *May* for example indicates the force of an absent potential barrier. This absent potential barrier may apply to the concrete, external sociophysical world, in which case it is interpreted deontically or dynamically: the participant *x* is not barred from doing something. By metaphorical extension, it may apply to the internal, mental world of reasoning, in which case it is interpreted epistemically: ‘the speaker is not barred by the available premises from the conclusion that …’ (Sweetser 1990: 61). Similarly, the deontic use of *must* is paraphrased as follows: ‘the direct force of y’s authority compels *x* to do something’, or in its epistemic use: ‘the available (direct) evidence compels *S* to the conclusion that …’ (1990: 61).

Perkins (1983) too describes the semantics of the English modals by a basic meaning such as ‘entailing X’ for *must*, ‘not precluding X’ for *can* and *may* and ‘disposed towards X’ for *will* and *shall*. Again, these basic meanings may apply to different worlds, that Perkins describes in terms of different sets of laws or principles to which the truth or actuality of propositions or events is relativized. He distinguishes three types of modality: the first type, epistemic modality, is concerned with rational laws of inference and deduction. It relates to the ‘interpretation of the world via the laws of human reason’ (p.10). The second type, deontic modality, is defined in terms of social or institutional laws. These laws can be either installed by a legal authority or institution or they can relate to the less formal rules of social status, to the authority one person has over another. The third type, dynamic modality, relates to the set of natural laws. This type of modality is concerned with the relationship between empirical circumstances or states of affairs and non-actualized events, which are the result from natural laws of e.g. physics, chemistry, biology, etcetera (p.11).

The (…) rational laws (or the laws of reason), social laws (or the laws of society), and natural laws (or the laws of nature) define three different types of possible worlds in which the truth/actuality of propositions/events may be assessed (…).

(Perkins 1983: 12)

Although the metaphorical descriptions of epistemic, deontic and root modality as different worlds or different sets of laws are appealing, a more lucid, less symbolic approach is presented by Van der Auwera & Plungian (1998: 80-81), who state that modality is ascribed to different sources, namely, participant-internal characteristics, participant-external circumstances, either deontic or non-deontic, and knowledge. This approach links the semantic distinctions in a consistent and plausible way to one another and it will serve as the basis for the

\(^4\) Talmy systematically describes meanings in terms of entities that exert forces on each other towards rest or towards action. Modal auxiliaries in Sweetser’s terms can be understood as expressing forces.
parameter of source in this thesis. With some slight adaptations, the different sources are defined as follows:

- **Participant-internal** modality ascribes the source of the modality to characteristics internal to the participant.
- **Participant-external** modality ascribes the source of the modality to circumstances external to the participant.
  - Deontic modality identifies the external circumstances as a deontic source.
  - Non-deontic modality identifies the external circumstances as something other than a deontic source.
- **Epistemic** modality ascribes the source of the modality to knowledge.

The combinations of basic senses with source lead to different meanings. This is illustrated for English, for the domain of potentiality expressed by *can*. Each example ascribes the potentiality to a different source. The reference of the example is given between brackets, C for Coates (1983) and P for Palmer (1986), followed by the page number.

(7) I can only type very slowly as I am quite a beginner. (C 92)
(8) Can I pinch a ciggie? – Course you can. Would you like a menthol or a plain? (P 71)
(9) Yes, we can send you a map, if you wish. (P 86)
(10) Can they be on holiday? (P 62)

In (7), the source of the potentiality is ascribed to characteristics internal to the participant, i.e. the (limited) typing skills. This raises an interpretation of ability. In (8) the source of the potentiality is ascribed to circumstances external to the participant, in this case the deontic source of the addressee and later the speaker. This raises an interpretation of permission. In (9) the source of the potentiality is ascribed to circumstances (mainly) external to the participant: there are maps available, there is a postal service, and the speaker is physically and mentally able to send a map. This raises an interpretation called root-possibility. Finally, in (10), the source of the potentiality is ascribed to knowledge, in this case about potential events. This raises the interpretation of epistemic possibility.

Different sources can be distinguished by using different paraphrases. For example, the root-possibility interpretation is preferably paraphrased by ‘have the opportunity’, whereas the epistemic possibility interpretation is preferably paraphrased by ‘it could occur that’ or ‘it could be the case that’. Compare (11)
and (12), in which the exclamation marks indicate the preferred interpretation and the question marks the less plausible interpretation.

(11) Yes, we can send you a map, if you wish.
    a. !We have the opportunity to send you a map.
    b. ?It could occur that we send you a map.
    → external non-deontic source, root-possibility

(12) Can they be on holiday?
    a. ?Do they have the opportunity to be on holiday?
    b. !Could it be the case that they are on holiday?
    → epistemic source, epistemic possibility

Similar distinctions hold for the other basic senses. The possible combinations between sense and source are presented in Table 4-1, with some provisional labels. When the source of the modality lies in internal characteristics of the participant, the interpretations that arise are ability, volition (will, 'want to'), weak internal need and internal need. (Weak) internal need means that the participant is forced to do something because of inherent properties, as in I need nine hours sleep every day. In combination with external non-deontic sources, the root-interpretations arise. With external deontic sources, the meanings for each sense are permission, desirability, weak obligation and obligation. Whether each possible combination is in fact attested in languages will be discussed later.

Table 4-1. Combinations of sense and source

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>SENSE</th>
<th>Potentiality</th>
<th>Disposition</th>
<th>Weak necessity</th>
<th>Necessity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
<td></td>
<td>ability</td>
<td>volition</td>
<td>weak internal</td>
<td>internal need</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>need</td>
<td></td>
</tr>
<tr>
<td>External</td>
<td></td>
<td>root-possibility</td>
<td>root-disposition</td>
<td>weak root-necessity</td>
<td>root-necessity</td>
</tr>
<tr>
<td>Non-deontic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deontic</td>
<td></td>
<td>permission</td>
<td>desirability</td>
<td>weak obligation</td>
<td>obligation</td>
</tr>
<tr>
<td>Epistemic</td>
<td></td>
<td>epistemic possibility</td>
<td>epistemic disposition</td>
<td>epistemic probability</td>
<td>epistemic necessity</td>
</tr>
</tbody>
</table>
4.2.3 Scope: participant-, event- and proposition-oriented

Although many semantic distinctions can be accounted for by the parameters sense and source, a third parameter is needed to describe finer distinctions. This is the parameter of scope. The third parameter stems directly from FG, in which expressions of modality are classified according to their scope, that is, the part of the utterance that is modified by the modal expression. The scope of a grammatical TMA expression may be the predicate, the predication or the proposition (see Chapter 2) (Dik 1997a; Hengeveld 1988, 1989, 2004b). If the scope is the predicate, the description of the relation or property predicated of the argument(s) is modified. In FG, this is called participant-oriented or inherent modality. It defines ‘relations between a participant and the realization of the [state of affairs] in which he is involved.’ (Dik 1997a: 241). If the scope is the predication, the event is situated in the real or imaginary world. This is called event-oriented or objective modality. It expresses the likelihood or actuality of the event. Finally, when the scope is the proposition, the truth of the propositional content is evaluated. This is called proposition-oriented or subjective modality. The speaker expresses his personal attitude towards the content of the proposition. Table 4-2 presents an overview of the different types of modality, based on scope.

Although the notion of scope is not generally used in the literature on modality, some authors do use the term subjectivity (among others) in relation to the speaker’s attitude or degree of commitment towards the propositional content (Coates 1983; Langacker 1990; Lyons 1977; Traugott 1982, 1989, 1995, 1996). Furthermore, Foley & Van Valin (1984) distinguish modality types on the basis of scope. They divide modality in four categories, which they call: (i) modality: ability, obligation, intention; (ii) status: actuality, realis-irrealis; (iii) evidential and (iv) illocutionary force (1984: 224). The first category is similar to participant-oriented modality in FG. However, the categories (ii), (iii) and (iv) are all considered to have scope over the proposition, whereas in FG, event-oriented modality (ii) is assumed to operate at the predicational layer, proposition-oriented modality (iii) at the propositional layer and illocutionary force (iv) is located at the interpersonal and not at the representational level.

Table 4-2. Different types of modality according to scope

<table>
<thead>
<tr>
<th>Type of modality</th>
<th>Scope over</th>
<th>Specification of</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant-oriented modality (π1)</td>
<td>Predicate</td>
<td>Realization of property/relation</td>
</tr>
<tr>
<td>Event-oriented modality (π2)</td>
<td>Predication</td>
<td>Actuality of event</td>
</tr>
<tr>
<td>Proposition-oriented modality (π3)</td>
<td>Proposition</td>
<td>S’s attitude towards the proposition</td>
</tr>
</tbody>
</table>
Bybee also distinguishes between different types of modality on the basis of relevance to the verb: ‘A category is relevant to the verb to the extent that the meaning of the category directly affects the lexical content of the verb stem’ (Bybee 1985: 15). She makes a rough distinction between two types of modality. The first type includes FG’s proposition-oriented modality and basic illocutions. According to Bybee it has the ‘whole proposition in its scope, and does not only modify the verb. Furthermore, since it expresses the speaker’s attitude, it does not have a direct effect on the situation described by the verb’ (1985: 22). Bybee further distinguishes agent-oriented modality (similar to participant-oriented modality in FG), but she does not indicate what the relevance of this category is. From the layered model of FG a more fine-grained distinction follows: participant-oriented modality is most relevant to the verb as it directly modifies the action or property designated by the predicate (or verb); event-oriented modality is less relevant to the predicate, since it modifies the situating of the event, designated by the whole predication, and finally, proposition-oriented modality is least relevant to the predicate since it modifies the presentation of the propositional content.

An important point to stress is that the oppositions in scope do not coincide with the oppositions in source or in sense. On this point, I deviate from Van der Auwera (2001: 240) who states that there is a one-to-one correspondence between source and scope of modality, i.e., participant-internal modality would

<table>
<thead>
<tr>
<th>Scope Over</th>
<th>Sense</th>
<th>Sense</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicate (π1)</td>
<td>Potentiality</td>
<td>Disposition</td>
</tr>
<tr>
<td></td>
<td>x is not precluded from PRED-ing</td>
<td>x is disposed to PRED</td>
</tr>
<tr>
<td>Predication (π2)</td>
<td>e is not precluded from occurring</td>
<td>e is disposed to occur</td>
</tr>
<tr>
<td>Proposition (π3)</td>
<td>S does not preclude p’s truth</td>
<td>S is disposed to conclude p</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scope Over</th>
<th>Sense</th>
<th>Sense</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicate (π1)</td>
<td>Weak necessity</td>
<td>Necessity</td>
</tr>
<tr>
<td></td>
<td>x is expected to PRED</td>
<td>x is forced to PRED</td>
</tr>
<tr>
<td>Predication (π2)</td>
<td>e is expected to occur</td>
<td>e is forced to occur</td>
</tr>
<tr>
<td>Proposition (π3)</td>
<td>S expects p to be true</td>
<td>S is forced to conclude p</td>
</tr>
</tbody>
</table>

Notes. x = argument; PRED = predicate; e = event; S = speaker; p = proposition
be participant-oriented (π₁), participant-external modality would be event-oriented (π₂) and epistemic modality would be proposition-oriented (π₃). I will, however, show that scope and source are different aspects of modal meanings and that both parameters are needed to describe the full array of modal distinctions. First, the meanings will be discussed that arise when scope and sense are combined. The basic senses may apply to the participant (x), the event (e) or to the propositional content (p). This results in different meanings, listed in Table 4-3.

The combination of scope and sense already results in twelve different meanings, but each of these meanings can be made more specific in language use as they also reveal the source of the modality. For example, there may be different sources that account for the fact that ‘x is expected to PRED’ or that ‘e is forced to occur’. Participant-oriented modality (π₁) that specifies the realization of the property or relation by the participants may have its source in participant-internal or participant-external factors. Event-oriented modality (π₂) that specifies the actuality of the event, may have its source in general participant-external circumstances, deontic circumstances, such as moral, legal, or social norms or in terms of knowledge about events. Finally, proposition-oriented modality (π₃) may have its source in the certainty of the speaker, or in his personal attitude about the content. The latter will be conceived of as a special case of deontic modality. Not every combination between source and scope is possible. The logically possible combinations are presented in Table 4-4.

If the source of the modality is participant-internal, then the scope can only be participant-oriented. But if the source is participant-external or epistemic, then different scopes are possible. This will be illustrated in the next sections.

**Table 4-4. Possible combinations of source and scope**

<table>
<thead>
<tr>
<th>Source</th>
<th>Scope over</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Predicate (π₁)</td>
</tr>
<tr>
<td>Participant-internal</td>
<td>X</td>
</tr>
<tr>
<td>Participant-external</td>
<td></td>
</tr>
<tr>
<td>Non-deontic</td>
<td>X</td>
</tr>
<tr>
<td>Deontic</td>
<td>X</td>
</tr>
<tr>
<td>Epistemic</td>
<td>X</td>
</tr>
</tbody>
</table>
4.2.3.1 External, non-deontic modality

Modal expressions that ascribe the source of the modality to participant-external, non-deontic circumstances can either have scope over the predicate (participant-oriented) or over the predication (event-oriented). In the former case, a specific participant is not precluded from, disposed to, expected to or forced to do something, because of external circumstances. In the latter case, however, it is not the specific participant, but the event that is not precluded, disposed, expected or forced to occur because of external factors. This difference will be shown with the basic sense of potentiality. If the scope is the predicate, then a specific participant is not precluded from doing something mainly because of extrinsic factors, and this raises the meaning of root possibility. Consider (13) and (14):

(13) Can you pick your own trousers up? (C94)
(14) I am afraid this is the bank’s final word. I tell you this so that you may make arrangements elsewhere if you are able to. (C141)

If the scope is the predication, then the event is not precluded from occurring, and the occurrence of the event is independent of the involved participants. These meanings arise when the participant is non-specific, as in (15) and (16), or not mentioned at all such as in passive constructions. See (17) and (18).

(15) I know the place. You can get all sorts of things here. (P84)
(16) National pressure groups cannot exist without full time staffs and a regular income. (P91)
(17) Salts can easily be separated from the solid residue by dissolving them. (C98)
(18) Well, I’ll see what can be done and give you a ring. (P84)

4.2.3.2 External, deontic modality

Modal expressions that ascribe the source of the modality to a deontic source can have scope over the predicate, the predication or the proposition. If the scope is the predicate, a specific participant is not precluded, disposed to, expected to or forced to do something because of an individual deontic authority. If the scope is the predication, an event is not precluded, disposed to, expected to or forced to occur because of a general deontic authority, such as a general rule or law. The occurrence of the event is independent on the involved participants. If the scope is the proposition, the speaker expresses his/her attitude towards the propositional content. These differences will be illustrated for the basic sense of necessity. Consider the distinction between participant-oriented (19) and event-oriented modality (20).
(19) You must tell me how to get to it. (C34)
(20) All students must obtain the consent of the Dean of the faculty concerned before entering for examinations. (C35)

In (19), a specific participant you is obliged to do something by an individual deontic authority, the speaker. In (20) the event of all students obtaining consent of the Dean before entering examinations is forced to occur because of a general deontic authority, the rules that hold at the faculties. The distinction between participant- and event-oriented deontic modality can be made clear by adding an adverb of location that indicates the location where the permission or obligation holds. If the deontic source is an individual, it is often impossible to add an adverb that specifies the location of appliance of the obligation or permission, see (21) and (23), whereas this is possible if the deontic source is a general rule, see (22) and (24):

(21) Can I borrow your pen (*here)? \(\rightarrow\) participant-oriented (\(\pi_1\))
(22) Can I pay by credit card (here)? \(\rightarrow\) event-oriented (\(\pi_2\))
(23) (*In this office) you mustn’t put words into my mouth, Mr. Williams. (C39) \(\rightarrow\) participant-oriented (\(\pi_1\))
(24) (In England) you must drive on the left side. \(\rightarrow\) event-oriented (\(\pi_2\))

The general rule or law can apply to specific participants as in (22). In most cases however the participants are non-specific ((20), (24) (25)) or not mentioned at all (26).

(25) In the library you can take a book out and keep it out for a whole year unless it is recalled. (P103)
(26) No vehicle may be left in the University grounds during vacation. (C132)

Finally, the scope of deontic modality can be the complete proposition. Consider (27):

(27) The government must act. It must make up its mind about priorities – offices or houses, housing estates or luxury buildings. (P106)

\(^5\) The location of the permission or obligation needs to be distinguished from the location of the property or relation. For example, you can park you car here (at this particular spot) does not yield an event-oriented reading since the adverb here modifies the action of parking, not the permission.
In (27), in contrast to (19) and (20), there is no actual obligation applied to the participants or the event. The speaker does not in fact lay his authority on the government, and there is no general rule that forces the event of the government acting to occur. With participant- and event-oriented deontic modality, obligation or permission belongs to the descriptive level just like is the case with participant-internal and participant-external modalities. In (19), the participant you is indeed obliged by the speaker) to do something. It can be paraphrased by ‘x is obliged by the deontic authority S to do … ’. The same holds for event-oriented deontic modality, where the general law or rule does indeed apply to the occurrence of the event. With proposition-oriented deontic modality on the other hand, the modal marker does not belong to the descriptive level: the speaker expresses that in his opinion, the proposition that the government acts and makes up his mind should be true. It is an imagined obligation, a thought or wish of the speaker, not a factual obligation that is ascribed to the participants or that holds for the event. The utterance in (27) cannot be paraphrased by ‘I oblige the government to…’, or ‘there is a general rule that obliges the government to …’ but rather with ‘It is my opinion that the government should be obliged to …’. The speaker thus talks about a mental construct.

Notice that it is not a difference of commitment that distinguishes proposition-oriented modality from the other scope types. Both in (19) and in (27) the speaker is personally committed to the obligation, since he or she is the deontic source, but with participant-oriented modality it is not the main purpose of the modal to express the speaker’s commitment, but rather to lay an obligation upon the addressee. The commitment of the speaker follows from conversational implicatures, not from using the modal. With proposition-oriented modality on the other hand, it is the main goal to express the speaker’s attitude or commitment. With event-oriented deontic modality, it is in general irrelevant whether the speaker is committed to what is stated by the general rule.

4.2.3.3 Epistemic modality

The final category of modality in which a distinction in scope exists is epistemic modality. Here, the source of the modality is knowledge. An epistemic expression can have either scope over the predication or over the proposition. If the scope is the predication, the speaker presents the modal information as an objective epistemic statement about the actuality of the event. This use could be paraphrased as ‘e is not precluded/ disposed/ expected/ forced to occur because of objective knowledge about events’. If the scope is the proposition, the speaker presents the modal information as a subjective epistemic statement about his personal commitment to the propositional
content or the amount of responsibility he takes for the truth of the proposition. A paraphrase would be ‘S does not preclude / expects p’s truth’ or ‘S is disposed / forced to conclude p because of the available premises’. The distinction between objective epistemic statements about the actuality of an event and subjective epistemic statements that report the stance of the speaker is not always clear-cut and many authors have conflated both uses. Notable exceptions are Lyons (1977) and especially Papafragou who refers to ‘objective’ modality as alethic (or logical) modality and says that alethic modality concerns ‘mind-independent abstract entities’ (Papafragou 2000: 81, emphasis mine).

In distinguishing between event-oriented epistemic modality and proposition-oriented epistemic modality, it matters most how S presents his utterance in the given context, as mainly objective or mainly subjective. Both interpretations are in fact closely related: if S presents his utterance as objective—it can occur that e—it may imply that S does not preclude the truth of p. And if S presents his utterance as subjective—S does not preclude p’s truth—it probably implies that the event e is not objectively precluded from occurring. Although there are no clear tests to distinguish between the two interpretations, it is possible to reveal the communicative intention by using paraphrases and/or by adding adverbs. This will be illustrated for the basic sense of potentiality. First of all, with objective epistemic modality it is acceptable to add the (subjective) adverb certainly, whereas this is strange for subjective epistemic modality, since subjective certainty and subjective potentiality (uncertainty) express a contradictory stance (Hengeveld 1988). Secondly, utterances with objective epistemic modality are preferably paraphrased by: ‘there is a possibility that …’, or ‘it can occur that …’, whereas utterances with subjective epistemic modality are preferably paraphrased by: ‘I suppose that …, but I’m not sure’ or ‘I doubt whether …’. The application of the tests are illustrated in (28) and (29):

(28) The only snag is that it has been raining (much later than is usual) and I could get held up for anything up to a week. (C108)
   a. !I certainly could get held up….
   b. !There is a possibility that I’ll get held up for anything up to a week.
   c. !I suppose that I’ll get held up …., but I’m not sure.
   → could is used OBJECTIVELY, event-oriented (π2)
In sum, there are two types of epistemic modality: epistemic modality that describes the actuality of the event and epistemic modality that indicates how certain the speaker is about the truth of the proposition. There are some remarks to be made about the expression of the actuality of events in combination with sense. When the basic sense is disposition, epistemic event-oriented modality expresses that e is disposed to occur (from an objective point of view). This can be considered a specific instantiation of the basic modal sense of disposition, but at the same time, the resultant meaning is closely related (or maybe even identical) to what a future tense marker expresses: it is presented as an objective fact that the event is disposed to occur. The relation between modality and future tense will be worked out in section 4.3.1.

Furthermore, within the sense of necessity, event-oriented epistemic necessity does not seem to exist, at least not without negation. Objective necessity denotes that ‘of the only possible e, which is $e_1$, $e_1$ is the case’. This could be regarded the default situation for every utterance. It seems communicatively unimportant to express that e is objectively necessary, since that is the normal, unmarked communicative situation. There is no need to specify that only $e_1$ is a possible actual event, unless the actuality status of $e_1$ is somehow special, because there are other possible e’s. There is, however, negated epistemic objective necessity which expresses ‘not necessarily $e_1$’, with the implication that ‘possibly $e_{\text{not1}}$’. It is semantically closely related to epistemic possibility. In English, it can be expressed by need not or doesn’t have to + negation. Examples are:

(30) Oh gosh, getting married is an awfully complicated business. [other speakers argue] Actually it needn’t be – it can be very straightforward. (C50)

(31) He doesn’t have to be at home: he could have gone straight to Caroline.

These utterances can be paraphrased as: ‘e does not necessarily occur’.
4.2.4 Classification of modality

Three parameters have been discussed on which the meaning of a modal expression may differ: sense, source and scope. All three parameters are necessary for the classification of modality as there are minimal differences between modal expressions on each of the parameters. This will be shown for English.

Firstly, the meaning of modal expressions can differ only on the parameter of sense. Consider the examples in (32) and (33):

(32) I can jump very high.
(33) I wanna jump very high.

Both sentences have scope over the predicate and the modal source of can and wanna is participant-internal. However, the sense is different: in (32) an expression is used (can) that indicates a sense of potentiality, whereas in (33) an expression is used (wanna) that indicates a sense of disposition. The paraphrase for (32) is: 'x is not precluded from jumping because of intrinsic factors', which raises the specific meaning of ability. In (33), x is disposed to jump, because of intrinsic factors, which raises the specific meaning of volition.

Secondly, the meaning of modal expressions may differ only on the parameter of source. Consider the examples in (34) and (35):

(34) Wow, you can jump five meters! Unbelievable.
(35) Everything is ready. You can jump now.

Can in (34) and in (35) has scope over the predicate and its general sense is potentiality. The only parameter on which can in both utterances differs is the source. In (34) the source of the potentiality is participant-internal: x is not precluded from jumping because of intrinsic factors. This raises the meaning of ability. In (35) the source of the potentiality is participant-external: x is not precluded from jumping because of external factors. This raises the meaning of root-possibility.

Finally, the meaning of modal expressions may differ only on the parameter of scope. See (36) and (37):

(36) You may borrow my book for three weeks if you want.
(37) In the library, you may borrow a book for three weeks.

The general sense of both utterances is potentiality and the source of the potentiality is deontic. This yields the interpretation of permission in both utterances. What is different, however, is that the permission in (36) concerns
the specific participant you and in (37) the event of borrowing a book. The scope of may in (36) is the predicate; this is participant-oriented modality, meaning x is not precluded from borrowing because of an individual deontic authority. In (37) the permission concerns the event of borrowing a book for three weeks by any participant (non-specific you). The scope of may is the predication; this is event-oriented modality, meaning e is not precluded from occurring because of a general deontic authority.

The examples in (32)-(37) illustrate that sense, source, and scope operate independently to a certain extent. Therefore, all parameters are necessary to account for the semantic distinctions of modal expressions. The combination of the parameters is presented in Table 4-5 and leads to the specific modal meanings listed in the individual cells, such as root-necessity or desirability. Within a basic sense, each cell is semantically related to the adjacent cells in that they only differ on one of the parameters. Furthermore, a cell at a specific location within a basic sense is related to the cell at the similar location in the adjacent basic sense: for instance, ability is related to volition. The dotted line between the two subsources of participant-external modality indicates that both categories are semantically related to the previous row of participant-internal modality and to the next row of epistemic modality. In English, subtypes of potentiality are expressed by can, could, may or might; subtypes of disposition by will, shall, would, or wanna; subtypes of weak necessity by should, ought to or be supposed to; and subtypes of necessity by must, need to, have (got) to, or got to.

The classification in Table 4-5 could be considered a representation of a conceptual space. Which categories are actually expressed and distinguished linguistically is a language-specific characteristic. In section 6.2.5 the modal system in English will be discussed in detail and in Chapter 7 crosslinguistic variation in modal systems will be examined.

Whether this classification of modality should be regarded as a polysemy account, in which a single expression has separate related meanings, or as a monosemy account, in which a single expression has one underdetermined meaning that in combination with pragmatic inferences gives different contextual interpretations, is not a very relevant issue in my opinion (see Papafragou 2000 for a discussion). Speakers use expressions in different contexts with different intentions: it is beyond the scope of this thesis to determine whether language users have stored one item together with the pragmatic conventions for the possible specific uses, or several items for which the semantic relations are specified. Possibly, they use both strategies.
Table 4-5. Classification of the domain of modality along the parameters sense, scope, and source

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>SCOPE</th>
<th>Participant-or.</th>
<th>Event-or.</th>
<th>Proposition-or.</th>
<th>Participant-or.</th>
<th>Event-or.</th>
<th>Proposition-or.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant-internal</td>
<td></td>
<td>ability</td>
<td></td>
<td></td>
<td>volition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participant-external</td>
<td>Non-deontic</td>
<td>root-possibility</td>
<td>root-possibility</td>
<td></td>
<td>root-disposition</td>
<td>root-disposition</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Deontic</td>
<td>permission</td>
<td>permission</td>
<td>permission</td>
<td>desirability</td>
<td>desirability</td>
<td>desirability</td>
</tr>
<tr>
<td>Epistemic</td>
<td></td>
<td>possibility</td>
<td>uncertainty</td>
<td></td>
<td>disposition/</td>
<td>prediction</td>
<td></td>
</tr>
</tbody>
</table>

Note: or. = oriented; nec. = necessity; oblig. = obligation

SENSE

<table>
<thead>
<tr>
<th>WEAK ENTAILMENT</th>
<th>ENTAILMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant-or.</td>
<td>Event-or.</td>
</tr>
<tr>
<td>weak need</td>
<td></td>
</tr>
<tr>
<td>weak root-nec.</td>
<td></td>
</tr>
<tr>
<td>weak oblig.</td>
<td></td>
</tr>
<tr>
<td>probability</td>
<td></td>
</tr>
</tbody>
</table>
4.2.5 Summary

Modality can best be defined on the basis of three parameters: **sense** conveys the basic meaning of a modal expression, on a scale from potentiality to necessity; **source** concerns the factors to which the modality is ascribed, participant-internal, participant-external or epistemic source; the **scope** of modality is the part of the utterance that is modified. The parameter of scope is most important to the remainder of this thesis. Grammatical modal expressions can have scope over the predicate; these expressions function as $\pi_1$-operators (participant-oriented modality). Second, grammatical modal expressions can have scope over the predication; these expressions function as $\pi_2$-operators (event-oriented modality). Third, grammatical modal expressions can have scope over the proposition; these expressions function as $\pi_3$-operators (proposition-oriented modality).

4.3 RELATED DOMAINS

4.3.1 Future tense and prospective aspect

As was already mentioned briefly in section 4.2.3.3, there is a close relationship between future tense and modality. On the one hand, modal expressions very often have future time reference: they do not describe or refer to an event that is remembered or currently perceived, but to an event that is imagined. There is often a strong implicature that the event described will take place in the (near) future. On the other hand, future reference has a sense of modality. This is a commonly accepted stance; Lyons, for example, states that future tense is partly temporal and partly modal in that there is always an element of prediction involved. (Lyons 1977: 677). Comrie (1985), in a similar vein, claims that:

> There is a sense in which the future is clearly different from the past. The past subsumes what may already have taken place and, barring science fiction, is immutable, beyond the control of our present actions. The future, however, is necessarily more speculative, in that any prediction we make about the future might be changed by intervening event, including our own conscious intervention. (p.43)

Mithun (1995: 378) claims that languages that systematically mark irrealis (see 4.3.2), often include future events in the irrealis domain. Finally, Palmer states that ‘the future is not fully known and it is always no more than a reasonable assumption that a future event will ensue’ (2001: 104-05).
The distinction between past and present tense is a pure distinction of tense, whereas the distinction between future and non-future tense often involves also a difference in the definiteness or factuality of the event.

What is conventionally regarded as the future tense (in languages that are said to have a future tense) is rarely, if ever, used solely for making statements or predictions, or posing and asking factual questions, about the future. It is also used in a wider or narrower range of non-factive utterances, involving supposition, inference, wish, intention and desire. (Lyons 1977: 816)

Similar claims can be made for prospective aspect, as in *Mary is going to write a letter*. When a participant is engaged in the pre-state of an event, it is probable, but not necessarily the case that the event will be realized. Furthermore, the being in a pre-state of an action may consist of having the intention to do that action, which is a modal notion and not only an aspectual one. In general, the inference that the event will in fact take place is much stronger for future tense than for prospective aspect.

Within the category of disposition *will* and *would* can express epistemic, event-oriented modality. This can be paraphrased by ‘e is disposed to occur’, which can hardly be distinguished from a future tense reading. There is thus a close relationship between the modal category of disposition and the future tense in English. Bybee and colleagues (Bybee, Pagliuca, & Perkins 1991: 279-80; Bybee et al. 1994) suggest that there is a crucial bridge from volition (and other categories) to future, which they refer to as intention. When *will* is combined with a first person, and the event is under the control of the first person, then this indicates not only that the subject is willing to act, but it also stresses that the event will be realized in the future, if not cancelled by unexpected circumstances. See (38) and (39):

(38) I’ll get you a map. (C174)
(39) But I will bring you more today I promise. (C174)

The label ‘intention’ suggests a participant-internal source, but that is a too narrow conception as the notion also implies that there are no external circumstances that prevent x from doing something. Where should intention be located in the classification of modality in Table 4-5? The semantics of ‘intention’ lie in between volition, which is participant-internal participant-oriented modality, and future, which may be conceived of as epistemic, event-oriented modality. Such utterances can function as a promise. This meaning might occupy the cell of root-disposition, probably with scope over the predicate, but it may as well be interpreted as a future tense restricted to first person.
I do not think that a strict decision has to be made whether future tense belongs to the domain of tense or of event-oriented modality, and whether prospective belongs to aspect or to participant-oriented modality. Both categories may be conceived of as strong links between different conceptual domains and there may be uses in which the tense or aspect senses are most prominent and uses in which the modal senses are most prominent. For English, the involved expressions (*will* and *be going to*) seem to denote most prominently tense and aspect. They are used most frequently in opposition to tense and aspect markers, respectively, rather than in opposition to modal markers. For this thesis, the main point is that future tense and possible modal implications is analyzed as $\pi_2$-operator and prospective aspect and possible modal implications as $\pi_1$-operator.

### 4.3.2 Irrealis

A second domain related to modality is the domain of irrealis. Evidence for its linguistic relevance is found in several languages, among others Central Pomo (Mithun 1995), Tok Pisin (Romaine 1995), Burmese and Dyirbal (Comrie 1985: 50-52), Caddo and Northern Iroquian languages (Chafe 1995). Irrealis is not crosslinguistically uniform, but in general it includes notions like future, negatives, yes-no questions, modality (necessity, possibility), conditions, imperatives, and prohibitives. Languages that mark irrealis differ in the constructions they mark as such, but ‘counterfactuals and conditionals, are generally classified as Irrealis in all languages with a grammaticized Irrealis/Realis distinction.’ (Mithun 1995: 376). Within this thesis, the label of irrealis will be used to refer to expressions that have hypothetical (40) and counterfactual (41) interpretations:

\[(40) \quad \text{If she had time, Mary would write a letter.}\]
\[(41) \quad \text{If she had had time, Mary would have written a letter.}\]

The definition of hypothetical is adopted from Bybee et al. (1994: 322) and here presented in D5:

**D5.** A **hypothetical** statement indicates that ‘the situation is unreal or imagined, but one that could be true’.

The speaker is thus neutral about whether the conditions for realization of the event are or will be fulfilled.

The definition of counterfactuals is also adopted from Bybee et al. (1994: 322) and here presented and in D6:
D6. A **counterfactual** statement describes an ‘unreal or imagined situation that could have been true but was not.’

Counterfactuals express that the condition(s) for realization of the event are not fulfilled.

Many languages that do not have a systematically marked opposition between realis and irrealis do have special expressions for hypothetical and counterfactual statements. In several languages, the same morphemes are used for marking past tense and hypothetical or counterfactual events. This led Steele (1975) and others to claim that the past tense and hypothetical events share the meaning ‘distant from present reality’. However, Bybee stresses that it is never the past tense marker alone that accounts for the hypothetical reading, but the combination of past tense morphology and a modal verb, subjunctive mood, a hypothetical marker (such as *if*), or imperfective aspect. Diachronically, it is not the remoteness of the past tense that develops a hypothetical sense, but ‘rather the fact that past combined with modality leaves open the possibility that certain conditions on the completion of the predicate have not been met.’ (Bybee 1995: 514). Not all languages make a distinction between hypothetical and counterfactual events, but, instead, they use only one general irrealis marker that covers both notions. Hypothetical and counterfactual expressions are closely related to event-oriented (objective) epistemic modality ($\pi _2$). Event-oriented modality situates the event in actuality in terms of the scale of senses: the event occurs potentially or necessarily in this world. Irrealis expressions relate the event to a hypothetical or counterfactual world. In particular hypotheticality and epistemic possibility are closely related and in some languages expressed by a single element. Other languages use one and the same expression for epistemic possibility and future tense. (See 7.5.2.1).

In FG, hypothetical and counterfactual expressions are analyzed as $\pi _2$-operators that indicate the actuality of the event: the event the speaker has in mind is related to an unreal, non-actual world. These expressions modify the predications and contribute to the situating function of the utterance.

### 4.3.3 Evidentiality

The final domain to be discussed is the domain of evidentiality. The definition used in this thesis (D7) is based on Dik (1997a: 242) and Palmer (2001: 8):

D7. **Evidential** expressions indicate the source of knowledge or the kind of evidence the speaker has for the proposition.

Consider the following examples of lexical (42)-(43) and grammatical (44) expressions of evidentiality:
(42) I saw that Mary has written a letter.
(43) People say that Mary has written a letter.
(44) Mary must have written a letter.

Chafe (1986: 262) and Mithun (1986: 89) both define evidentiality as marking the reliability of the information. Common distinctions within the domain of evidentiality are between sensory (42) and non-sensory evidence or between direct and non-direct evidence. Within the category of sensory evidence there may be a distinction between visual, non-visual and auditory evidence. Another evidential category that is often expressed is the function of hearsay (also referred to as quotative or reportative), see (43), which indicates that the source of the speaker’s knowledge is the utterance of someone else. Finally, there are expressions that indicate that the speaker’s knowledge is an inference made from non-sensory evidence. See (44).

It may be clear from this discussion that evidentiality is analyzed in FG as an operator with scope over the proposition ($\pi$): it expresses the reliability of the propositional content by indicating the source of the information. How did the speaker acquire this information? Evidential markers thus modify the presentation of the propositional content.

Evidentiality is related to modality in that the notion of inference occurs both as a specific distinction within the system of proposition-oriented (subjective) epistemic modality and within evidentiality. Furthermore, in some languages, modal auxiliaries have come to express evidential notions. For example, German uses *sollen* (‘shall’) to express hearsay. See (45):

(45) Und das soll gut sein?
    And that shall good be
‘Is it said to be good?’

### 4.4 Conclusion

In this chapter I discussed the semantics of modality and related notions. The domain of modality was described using the parameters of sense, source and scope. The minimal differences in the interpretation of modal expressions can only be accounted for when all three parameters are taken into account, as there is no one-to-one relation between the parameters.

Grammatical expressions of modality can have scope over the predicate, the predication or the proposition, depending on their specific function. The domain of irrealis covers notions of hypothesis and counterfactuality indicating

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6 Cf. Willett (1988) for an extensive study on evidential functions that occur crosslinguistically.
that a situation is non-actual. Expressions of irrealis function as $\pi_2$-operators. Expressions of evidentiality encode the source of knowledge or the kind of evidence the speaker has for the proposition to indicate the reliability of the proposition. These expressions function as $\pi_3$-operators.

Table 4-6 presents an overview of the TMA domains and their subcategories discussed in this chapter. There are several semantic relations within and between the domains in Table 4-6. An additional relationship exists with future tense and prospective aspect.

In Chapter 5 the hierarchical relations between different TMA domains will lead to concrete predictions about linguistic implications of the Scope Hierarchy.

Table 4-6. Classification of modality, irrealis and evidentiality according to scope

<table>
<thead>
<tr>
<th>TMA domain</th>
<th>Scope over</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant-oriented modality</td>
<td></td>
</tr>
<tr>
<td>- internal</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>ability, volition, (weak) need;</em></td>
</tr>
<tr>
<td>- external, non-deontic</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>root-possibility, root-disposition, (weak) root-necessity;</em></td>
</tr>
<tr>
<td>- external, deontic</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>permission, desirability, (weak) obligation</em></td>
</tr>
<tr>
<td>Event-oriented modality</td>
<td></td>
</tr>
<tr>
<td>- external, non-deontic</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>root-possibility, root-disposition, root-(weak) necessity;</em></td>
</tr>
<tr>
<td>- external, deontic</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>permission, desirability, (weak) obligation</em></td>
</tr>
<tr>
<td>- epistemic</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>epistemic possibility, (future,) probability, necessity</em></td>
</tr>
<tr>
<td>Irrealis</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>hypothetical, counterfactual</em></td>
</tr>
<tr>
<td>Proposition-oriented modality</td>
<td></td>
</tr>
<tr>
<td>- epistemic</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>uncertainty, prediction, (weak) certainty, inference;</em></td>
</tr>
<tr>
<td>- deontic</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>permission, desirability, (weak) obligation</em></td>
</tr>
<tr>
<td>Evidentiality</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>sensory evidence, inference, hearsay, etc.</em></td>
</tr>
</tbody>
</table>