

Modal Categories and Dynamic Modality in English*

Yong-Beom Kim
(Kwangwoon University)

Kim, Yong-Beom. 2017. Modal Categories and Dynamic Modality in English. *Korean Journal of English Language and Linguistics* 17-4, 701-727. This paper attempts to clarify obscurity regarding classification boundaries of modal categories in English and related ambiguities in the interpretation of the modal expressions. By utilizing cognitive concepts such as modal forces, their sources and cognitive domains, this paper will attempt to provide a more explicit categorization of English modal categories in a mutually exclusive manner so that the domain-related usages of the modal verbs and the ambiguities in their interpretations can be accounted for in a principled and unambiguous way. Especially, this paper puts forth an expanded notion of dynamic modality that can deal with various usages of modal verbs which have been left unaccounted for.

Keywords: modality, epistemic modality, deontic modality, dynamic modality, modal force, cognitive domain

1. Introduction

This paper attempts to clarify some obscurity involving classification of modal categories and define the notion dynamic modality in a precise way. Palmer (1986: 1-2) stated that the notion of modality is vague and leaves open a number of possible

* The research leading to this paper was supported by 2016 Kwangwoon University Research Grant (grant number 2016-0165), for which I am grateful to the university. I also thank three anonymous referees for their valuable comments on the earlier version of this paper. A rudimentary version of this paper was presented at the Fall Meeting of The Korean Association for the Study of English Language and Linguistics in 2016 and appeared in the proceedings from the conference.

definitions. Even well written grammar books have difficulty dealing with this subject. Huddleston et al. (2002: 172), for instance, also states that modality is “not sharply delimited or subdivided, so that we shall need to make frequent reference to the concept of prototypical features and to allow for indeterminacy at the boundaries of the categories.” Portner (2009) is not an exception in that he starts to explore a wide range of topics regarding modality without providing a precise definition for modal categories. The problem is that there are a number of different modal categories suggested by different linguists and they are not precisely defined or differentiated. See Portner (2009: 140), and Brewer (1987: 74) for different kinds of modal categories. Also see Radden et al. (2007: 246) and Quirk et al. (1985: 219) for their own definitions and the resulting categories.

In order to deal with the categorization problem, this paper will make a crucial use of cognitive notions such as modal forces and their domains as suggested by Talmy (1988, 2000) and further employed by Sweetser (1990) and by Radden et al. (2007). This paper will propose a domain-oriented categorization of modality based on where modal forces originate from, what kind of properties the forces have and what their acting domains are. This paper will proceed as follows. In Section 2 we review previous studies related to basic definition of modal categories, especially the proposals of Palmer (1990), of Perkins (1980, 1983), of Radden et al. (2007), and of Portner (2009), pointing out their shortcomings especially regarding the definition of dynamic modality. In Section 3 we introduce an extended notion of dynamic modality so that it can account for the long-standing issues related to dynamic modality and other exceptional cases pointed out by Kratzer (1977) and others. In this section we not only make theoretical proposals but exemplify possible of interpretations of modal verbs using *must* and *can*. Section 4

presents conclusive remarks and alludes to remaining problems for future research.

2. Previous Studies

In this section we will review various kinds of modal categories proposed by Palmer (1990), Perkins (1983), Radden et al. (2007) and Portner (2009), pointing out their shortcomings and hinting at possible solutions.

2.1 Traditional Modal Categories

Palmer (1990) distinguishes three types of modal categories: epistemic, deontic and dynamic. According to him, epistemic modality involves the speaker's judgement regarding truth of a proposition based on evidence and knowledge. Thus, epistemic modality crucially involves the speaker's judgement, evidence or clues. On the other hand, deontic modality concerns expressing what is obligatory, permitted, or forbidden. Thus, epistemic and deontic modalities can be seen as expressing the speaker's attitudes toward propositions and actions, respectively. Dynamic modality, according to Palmer, is concerned with the ability and volition of the subject of the sentence as shown in (1).

- (1) a. John can swim across the Han River. (ability)
b. John will not leave his hometown. (volition)

One of Palmer's problems concerns the definition of dynamic modality as a notion confined to the properties of the subject, especially to related ability and volition. There seems to be no a priori reason that dynamic modality is confined to the subject of a sentence, and to ability and volition. This type of definition may

not exhaust the possible meaning range of dynamic modality, since there are many cases that indicate that the meaning of *can* should be explained in terms of other factors than the subject of a sentence. Consider (2).

- (2) A: Can you drive?
 B: No, I can't. I never learned.
 A: Can you drive?
 C: Yes, I can, but my license has been cancelled.
 A: Can you drive?
 D: No, I can't, because my car is broken.

These examples are adopted from Groefsema (1995) and they show that *can* in speaker A's utterance in (2) cannot have specific meaning like 'ability' (of the subject) but that it should mean something like 'overall conditions' for driving. To see this, consider the pair of utterances by speakers A and D. If speaker A asked about the ability of the subject, speaker D's reply would not make sense because speaker D's utterance implies that he has the ability to drive. That is, the use of *can* and *can't* is not simply attributable to the ability of the subject but to other factors. This is problematic with the traditional approach since its definition of dynamic modality concerns the subject only.

Furthermore, Palmer's approach cannot cope with Kratzer's examples in (3) since sneezing in (3a), for examples, is neither an obligation imposed on the subject (i.e., deontic) nor a kind of 'ability' of the subject (i.e., dynamic).

- (3) a. If you must sneeze, at least use your handkerchief.
 [dispositional]
 b. When Kahukura-nui died, the people of Kahukuranu
 said: Rakaipaka must be our chief. [preferential]
 (Kratzer 1977: 338)

Furthermore (3b) may not be included in any modal categories of Palmer's modal system since the person in question is not supposed to feel obliged to be a chief.

Perkins (1983) also distinguished three different types of modality depending on the kinds of laws applying to them, as shown in (4).

- (4) a. epistemic modality: defined in terms of rational laws
 - b. deontic modality: defined in terms of social laws
 - c. dynamic modality: defined in terms of natural laws
- (Perkins 1983: 35–41)

The categorization criteria in (4) look promising in principle since the criteria given above are clearly defined based on different kinds of laws. His definition, however, needs to be refined or revised since it is not clear how natural laws, for instance, can apply to cases like (5).

- (5) a. John can speak German.
- b. John can drive.

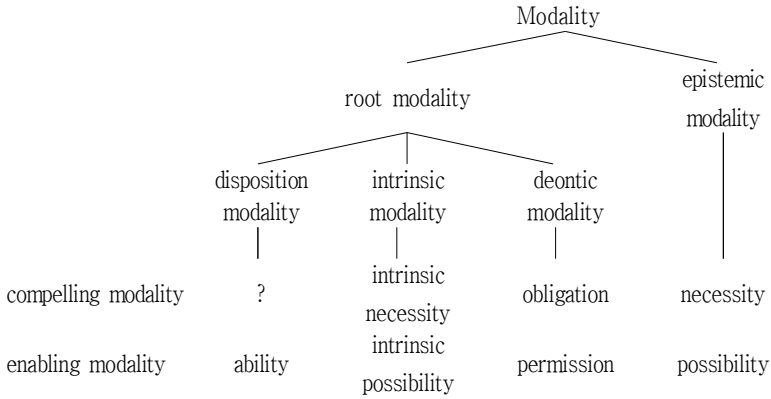
That is, it is difficult to imagine what kind of natural law applies in connection with John's speaking German. Furthermore, it is not clearly defined what the laws have for their domain of application. For instance, if there is a law, it may apply to an individual as a physical being, a biological being, or a social being, or it may regulate some phenomena like the motion of falling, or human behavior etc. This will have to be defined since a single object can belong to different domains.

2.2 Radden et al. (2007) and Portner (2009)

Radden et al. (2007) suggests a system of modal categories as

shown in (6). What is new in (6) is the inclusion of ‘disposition’ and ‘intrinsic’ modalities instead of the traditional ‘dynamic’ modality. As we will see in section 3, different domains have different modal sources and different objects relevant to different sources.

(6) Main Types of Modality¹



(Radden et al. 2007: 246)

According to Radden et al., intrinsic modality “is concerned with potentialities arising from speaker–external sources, i.e. from intrinsic qualities of a thing and circumstances, as in *The meeting can be cancelled*”; disposition modality, in contrast, includes ‘ability’ or ‘propensity’ and ‘willingness,’ as in *You can drive*.

However, the distinction between disposition and intrinsic modalities is not clearly seen since they do not make explicit what the ‘intrinsic qualities’ are. We cite their examples in (7):

¹ “?” is inserted by the author of this paper to indicate that there is a gap in their analysis. There can be an incidental gap but as we can see later, this gap should be filled.

- (7) a. You must lock the door. [obligation]
 b. The door must be locked. [intrinsic necessity]
 c. It is necessary for the door to be locked
 (Radden et al. 247)

Radden et al. distinguish the two instances of *must* and states that (7c) is a paraphrase of (7b), adding that “The paraphrase with ‘necessary for’ allows us to identify an intrinsic necessity, sometimes also called **deontic necessity**. The force of the ‘necessity’ arises from some intrinsic qualities of the door and some rules.” (p. 248, bold face is mine). The problem is that intrinsic necessity is not well defined and not differentiated from other notions like obligations of deontic modality in (6). It is not clear how intrinsic or deontic necessity differs from deontic obligation in (6). Even if we can agree that there are substantial differences, we still have sentences like *The door must be opened*, *The door must be opened or shut*, *The door must be opened and destroyed*, and so on. Given these sentences, can we say that ‘being opened’ is an intrinsic property of the door? We may not.

Secondly, there is a special type of deontic modal reading which is called ‘ought-to-be’ reading² in (7b) which can be translated as in (8), and this may not be accounted for by Redden et al. since this interpretation involves the addressee in the context.

- (8) *The addressee is under obligation to make sure that the door is locked.*

² This is what is pointed out by Feldman (1986) and Brennan (1993). For instance, (i) has two readings as shown in (ii).

- (i) Mary should return the pen she borrowed
 (ii) a. Mary is under obligation to return the pen.
 (ought-to-do reading)
 b. The addressee is under obligation to return the pen.
 (ought-to-be reading, i.e., if Mary is a small child)

In fact, this ‘obligation’ reading seems to be a preferred reading of (7b)³.

Thirdly, there is a non-trivial problem we can see in the categorization in (6). In the diagram, there is a gap in their diagram as marked with “?”, which means there is no compelling dispositional properties. As we will point out in connection with (3), there can be some compelling dispositional properties of an individual and those of a situation. For instance, if there arises a situation that inevitably induces sneezing, those situational factors that induce sneezing can be a source of compelling dispositional properties of the situation. In section 3.2 we present a category of dynamic modality that can incorporate ‘disposition modality’ and ‘intrinsic modality’ and will exemplify the related usages in 3.3.

In his extensive discussion of modality, Portner (2009) presents three major modal categories: epistemic, priority and dynamic, as shown in (9).

(9) <Epistemic>

- (a) A typhoon may hit the island.
- (b) Mary must have a good reason for being late.

<Priority>

- (c) The rich must give money to the poor. (deontic)
- (d) You should try this chocolate. (bouletic)
- (e) You should add some more salt to the soup.
(teleological)

<Dynamic (volitional)>

- (f) John can swim. (ability)
- (g) You can see the ocean from here. (opportunity)⁴

³ The existence of ‘ought-to-be’ reading does not exclude a possibility of the impersonal reading of (7b).

⁴ I do not believe examples like (9g) constitutes a separate modal category. A similar case is brought up by Perkins (1983: 32) and others attempting to differentiate between such cases as (a) and (b) below:

- (h) Mary will laugh if you tell her that. (dispositional)
 <Dynamic (quantificational)>
 (i) A spider can be dangerous. (existential)
 (j) A spider will be dangerous. (universal)
 (Portner 2009: 135)

Portner's categorization of modality involves the notion priority and it plays an important role when we choose between different modal auxiliaries with different modal forces. However, there are cases where priority ranking cannot be determined. This can happen because Portner's priority modality is based on a kind of quantificational ranking among accessible worlds. Kratzer's (1981) ordering relations on which Portner relies are quantificational in the sense that the ordering of worlds is determined by how many propositions are true in those worlds, as shown in (10):

- (10) The Ordering \leq_A
 For all worlds w and $z \in W$: $w \leq_A z$
 if and only if $\{p: p \in A \text{ and } z \in p\} \subseteq \{p: p \in A \text{ and } w \in p\}$
 (Kratzer 1981: 47)

This ordering relation assumes that possible worlds are relatively

- (a) Joan can hear voices telling her to save France.
 (b) Joan hears voices telling her to save France.

We believe *can* implies the existence of some kind of possible obstruction and it can be captured in terms of enabling and blocking forces (see Kim, Y-B. 2017a). On this view (a) implies such obstruction is removed or nullified whereas (b) has no such implication. Perception verbs are peculiar in that perception occurs regardless of our will or volition once a stimulus can reach our perception organ. What matters most in this case is whether there is a blocker in the travel path of the stimulus. In a sense *can* means 'overcoming or nullifying such a blocking by circumstantial means' not by the ability of the subject.

ordered according to how close they are to the most ideal world. In (10), ordering source A could be a set of propositions and the definition says that world w is more ideal than world z iff a set of worlds p^5 that can contain z is a subset of the set of worlds that can contain w . Since p is a variable over proposition, the ordering is determined by how many propositions are true in w and z . For instance, if a ordering source is a set of propositions (or laws) $\{\textit{people should not kill other people, people should not kill animals, people should not cut trees}\}$, the most ideal (accessible) world would be the one in which all the three propositions are true, and the next ideal worlds would be the ones in which two of the propositions are true, and so on. Different sets of propositions would be relevant depending on what kind of modal base the speaker is attuned to. However, there can arise a case where priority cannot be decided, i.e. when the ordering source is a singleton set⁶ or when no subset relations hold between two ordering sources. That is, the ordering cannot be obtained as to which is more ideal between the accessible worlds. For instance, there can be a world where killing people (and killing animals) is prohibited and a world where killing animals (and cutting trees) is banned, and there is no priority relation between these two, although there seems to be a clear difference in the degree of modal force levels.

Another problem with the categorization in (9) is the inclusion of teleological modality. This can be problematic because most human activities are teleological in the sense that we have some kind of goals or purposes in them. For instance, there can be a politeness code in a civil society and some of its purposes (or teleological aspects) are to save face and maintain good

⁵ A proposition can be equated to a set of worlds in which it is true in possible worlds approach.

⁶ In many cases, modal sentences are prompted by a single clue as in *It must be raining outside* on hearing only some sounds hitting the windows.

interpersonal or social relations, but it is usually encoded as a kind of rules (deontic modality) as in *You should obey your parents*. The same is true in other domains. For instance, criminal laws are intended to bring justice to the society and they are stated in terms of obligation or prohibition, which seems to be deontic in semantic terms. Portner's example in (9c), for instance, may be turned into a teleological statement by adding *in order to achieve socioeconomic justice*.

Furthermore, his possible worlds approach focuses on quantifying or restricting possible worlds by making use of modal bases, accessibility relations and ordering sources, and he does not pay due attention to some empirical data. For instance, consider the dynamic modality as shown in (9). What can be pointed out with the classification is that the labeling for the modal subcategories is unclear and confusing. For instance, it is not clear what entitles 'volitional' to be a super category of ability, opportunity and dispositional. Portner (2009: 200) states that volitional modality has "to do with the ways in which circumstances affects actions available to a volitional individual" and those volitional individuals have to be "at the very least, always a volitional, i.e. a sentient individual who is willfully involved in the event," but in many cases dynamic modality involves non-volitional subjects as shown in (11).

- (11) a. This machine can lift a house. (ability)
 b. This river will freeze if the temperature goes below
 -15 Centigrade. (dispositional)

Furthermore, having a 'quantificational' modality as a separate subcategory does not seem to be well-grounded, either. Portner states that *can* introduces an existential quantification over spiders and *will* involve a universal quantification in (9i) and (9j), respectively. It may be true that there can be an existential

interpretation but it is a less preferred and theoretical one. The preferred reading of (9i) would be that the property of being dangerous can show up with spiders in some specific situations, i.e. when they are attacked or approached. This is the usual possibility interpretation of *can*, which may be captured as an existential quantification over some possible worlds. It implicates that we should be aware of the possible danger from each and every spider, not some spiders, for instance, when we are attacking them.

The second point is that indefinite NPs may receive a quantificational interpretation without modals, as shown in (12).

- (12) a. A dog sometimes howls.
 b. A boy does not cry.

The preferred reading of (12a) would be: the property of howling can appear with every dog in some specific situations. (12b), according to Greenberg (2002) receives a (restricted) universal quantification interpretation as shown in (13).

- (13) a. A boy does not cry (in virtue of \wedge **be tough**)
 b. $\forall w' [\forall x [\text{boy}(x, w')] \rightarrow [\text{tough}(x, w')]] \rightarrow$
 $[\forall x, s [\text{boy}(x, w') \wedge C(s, x, w')] \rightarrow [\neg \text{cry}(s, x, w')]]$
 Paraphrase: In all worlds where every boy is tough,
 every boy (in all relevant situations) doesn't cry.
 (Greenberg 2002: 8)

This implies that modal auxiliaries are not directly responsible for the quantificational interpretation of indefinite noun phrases.

3. Modal Categories, Theirs Force and Domains

In this section we present a categorization scheme that can help resolve some issues that are raised in section 2. This section will utilize modal forces as introduced in Talmy (1988, 2000) and extended by Sweetser (1990) and also by Portner (2009: 141). This term can be related to ‘modal strength’ as used by Huddleston et al. (2002: 176). This paper will also utilize the notion cognitive domains⁷ where modal forces operate. For instance, some modal forces coming from obligation of social rules will apply to social domains only. This paper will utilize an epistemic domain, a social domain and an object domain⁸ and each domain will have its unique ingredients including different kinds of modal forces. An epistemic domain is a kind of mental domain where mental activities like inferences take place based on some contextual clues including what we perceive in a speech context and what we already know; social domains are conceptual spaces where a collection of social rules can apply; an object domain is where individuals exist along with a collection of knowledge about those individuals. An object domain is newly introduced in this paper in order to account for an individual's intrinsic properties that are related to dynamic modality. In what follows, we will distinguish between different modalities by examining what kind of modal forces influence what kinds of objects in each domain.

⁷ We define a domain as a conceptual space where a collection of knowledge is structured. Radden et al. (2007: 11) states that domains are the general fields to which a category or frame belongs in a given situation. For example, a knife belongs to the domain of ‘eating’ when used for cutting bread on the breakfast table, but to the domain of ‘fighting’ when used as a weapon.

⁸ An object domain is a domain where physical or abstract objects exist in the sense that sentence meanings can be accounted for in terms of objects and their relations. Objects could be anything ranging from concrete objects to abstract situations. Thus, an individual can belong to an object domain as a biological being and it can also belong to a social domain as a participant in some social relations.

3.1 Dynamic Modality Expanded

In connection with the data in (2) we pointed out that the meaning of *can* is very elusive and difficult to confine. In this regard, we propose that dynamic modal verbs should be able to predicate not only properties of the subject but also properties of the situations denoted by the sentence. This means that dynamic modality can have the subject and the situation itself within its domain.

Given this, A's statement and B's in (2) can be paraphrased as in (14a) and (14b), respectively⁹:

- (14) a. *Are all the conditions needed for driving compatible with you?*
 b. *The conditions needed for driving are not compatible with me. (I lack driving ability because) I never learned.*

In other words, speaker A is asking about the overall conditions of the whole situation regarding driving and the respondent speaks about his own conditions. This locution is very natural and plausible, because speaker A as an inquirer naturally asks about everything relevant to driving since he wants to find someone who can actually drive while the respondent will naturally mention what is relevant to him. These examples show that *can* is properly used to denote overall conditions for some action. In this paper 'overall conditions' are viewed as properties relevant to a certain situation.¹⁰ This means that situations can belong to an object domain like individuals in our analysis.

⁹ Since we are mainly concerned with classification of modality, we simply present paraphrases to disambiguate the differences in this paper. See Kim, Y-B. (2017a, 2017b) for a more formal treatment.

¹⁰ In this scheme of interpretation the properties of a subject can be part of 'overall conditions.'

This extended notion of dynamic modality can be applied to other exceptional cases. For instance, the data in (15) and Kratzer's recalcitrant examples in (16) can be accounted for with the expanded notion of dynamic modality. Consider (15) and (16).

- (15) a. All creatures must die in the end.
 b. The plants must prevent their internal salt concentrations from getting too high.
 (COCA¹¹. Original source: Desert Dreams, Mares, M. 2003. *Natural History*)
- (16) a. If you must sneeze, at least use your handkerchief.
 [dispositional]
 b. When Kahukura-nui died, the people of Kahukuranu said: Rakaipaka must be our chief. [preferential]
 (Kratzer 1979: 338)

Must in (15a) does not impose any obligation on creatures by the speaker, but simply depicts the inevitable destiny of the creatures, a type of inherent potential. Likewise (15b) also depicts a life mechanism within plants which is genetically coded in their genes. Thus, we can say, the inevitable modal forces come from the inherent properties or potentials of the subjects of these sentences. In contrast, in (16), we view situations as having some kind of inevitable potential in them. According to our scheme of interpretation, (16a) would be paraphrased as in (17):

- (17) *If there is a situation in which you (are induced inevitably to) sneeze (because of the situational factors), I am asking you to use your handkerchief.*

¹¹ COCA is the acronym of Corpus of Contemporary American English. Its website address is <http://corpus.byu.edu/coca/>.

Of course, we can have a subject-oriented interpretation as can be paraphrased as in (18):

- (18) *If there is a situation in which you inevitably sneeze (because of your physical conditions), I am asking you to use your handkerchief.*

Likewise, (16b) would be more likely to be interpreted as situation-oriented since Rakaipaka do not seem to have any obligation imposed upon him by the speaker. That is, it can be paraphrased as in (19):

- (19) *There must arise a situation which forces Rakaipaka to be their own chief¹².*

In sum, subject-oriented dynamic modals hold the subject accountable for the potentiality or inevitability while situation-oriented dynamic modals attribute such properties to the situation.

Before going further, we summarize our discussion in a diagram as in (20) so that we can classify modal usages in an exhaustive manner.

¹² (16b) may be interpreted as conveying deontic modality if there is a rule or any tradition that necessitates the person in question to be chosen. However, if (16b) simply represent the admiration of the people or the people's desires, then (16b) can be seen as description of such desires, which can be seen as a situational potential.

(20)

modality	modal domain		sources of modal force	grammatical function
	epistemic (proposition level)		clues, evidence	modulation of truth level of a proposition
	non-epistemic (action/state level)	deontic (social)	social norms	imposition of influences on the subject
		dynamic (non-social)	individual situational	potentials of objects

First, we can have epistemic and non-epistemic domains (Also see Portner 2009: 139). In broader terms, we can say, modality operates on propositional level regarding the uncertainty of an utterance (*epistemic domain*) and on eventuality level regarding the non-actuality of actions¹³ and states (*non-epistemic domain*). The epistemic domain concerns the speaker's mental activities like inference; deontic and dynamic domains involve non-mental activities. Non-mental domains can be further divided into social and non-social domains. Non-social domains are kinds of object domains where individuals stand alone and are looked at for their own properties; social domains are those domains of human interaction which needs some regulations and rules to be shared among individuals.

3.2 Modal Domains and Modal Forces

In this section, we will show how various modal forces

¹³ Palmer (2003: 7-10) also distinguishes between two types of modality: propositional modality and event modality. The former has to do with a speaker's attitude to the status of a proposition and the latter with actuality of events.

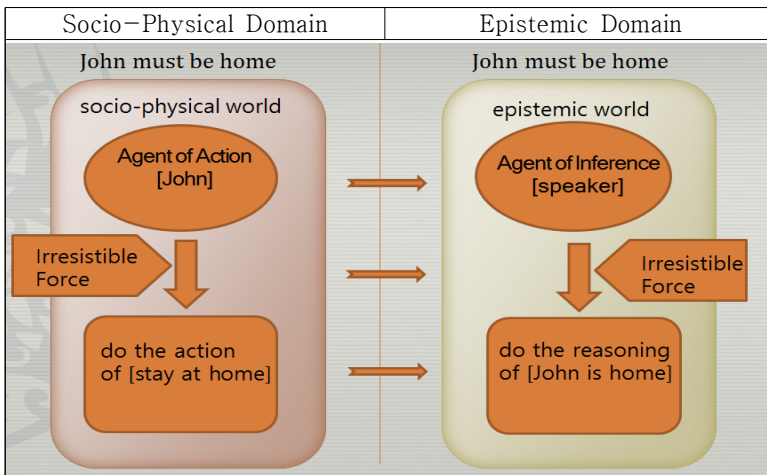
operates in different domains. This section will also show that we can dispense with ‘domain mapping’ suggested by Sweetser (1990) and that we can account for various usages of modals in a general and principled way.

First, we will briefly review Sweetser’s (1990) domain mapping account of modality and will eventually recapture her notion in a synchronic terms of modality. Sweetser proposes a cognitive approach that crucially makes use of the notion domain mapping between the socio–physical domain and the epistemic domain. To see this, consider the case of the modal verb *must* as shown in (21).

(21) John must be home.

According to Sweetser, (21) has two readings corresponding to the two domains, socio–physical and epistemic and they can be graphically represented as in (22)

(22) Domain Mapping



As we can see in (22), some irresistible forces apply to some agents so that the agents must do some actions. Although this is a successful account of deontic and epistemic modals in English, it is a two-tiered approach and does not cover the object domain, i.e. dynamic modality.

In this section we will distinguish three domains of modality where modality operates, as shown in (23). Within this approach, the three domains will constitute modality without any hierarchical relations among them, i.e. without distinguishing source domains and target domains. Thus our approach will be a synchronically oriented one and it can be diagrammed as in (23). We exemplify the modal verb *must* in order to compare it with Sweetser’s proposal.

(23) Modality Domains, Modal Sources and Functions

modal force of <i>must</i>	Irresistible Force		
	↙	↓	↘
domain	epistemic domain	deontic domain (social domain)	dynamic domain (object domain)
source of force	clues, evidence available to speaker	social norms	speaker’s cognition of potentials of individuals and situations
point of force contact	the speaker	the subject (the addressee)	the subject or the circumstance
speech function	speaker’s modulation of certainty level of utterances	imposition of obligation on the subject	the speaker’s description of potentiality of the subject/situation

In (23), we see that a certain kind of irresistible force applies to three domains all at once. Each domain has its own entities and related forces and its own mechanisms in dealing with those

factors.

3.3 Usages of *must* and *can*

This section illustrates various usages of *must* and *can* as discussed above and as summarized in (23). First, we take *must* to consider its epistemic modal usage. As shown in (23), *must* in the epistemic domain affects the speaker to the effect that he/she makes a strong epistemic statement. The illocutionary point in this domain is to modulate the factuality of propositions since the speaker does not have direct knowledge of the situation. Thus, for instance, (21) can be paraphrased as in (24).

(24) *Based on clues and evidence, the only (or inevitable) conclusion that the speaker can make is that John is at home.*

This implies that the clues and evidence that speaker is attuned to are so strong that there can be no other alternative conclusions.

Secondly, in the case of deontic domain, the illocutionary point has to do with having some agent (usually the subject of a sentence) act according to some rules and regulations in a society. Thus, the modal force gets engaged with agent theta-role bearers of an event in the sense that some obligation is imposed on the agent to do a certain action. On a deontic reading, (21) can be paraphrased as in (25)

(25) *Based on rules and regulations, the only/inevitable action the agent can do is to stay at home.*

This implies that the rules and regulations that speaker is imposing on the subject are so strong that there can be no other

alternative way of action than stay home.

Thirdly, dynamic modality concerns describing potentiality of certain object as some inevitable property. It usually depicts futurity or potentiality such as volition, ability, destiny, etc. as shown in (15) and (16). (15a), for instance can be paraphrased as in (26)

(26) *Some potent properties (like genetic makeup) inevitably compel all humans to die.*

In addition to the illustration of the usages of *must*, we can also show that *can* may be accounted for in the same manner. First, let us consider (27) to see how *can* get interpreted in different domains.

(27) John can swim/can be swimming.

The modal verb *can* in (27) may have four possible readings according to our proposal: epistemic, deontic and dynamic (individual and situational). The usual epistemic reading can be paraphrased as in (28).

(28) *The speaker's conclusion that John is swimming is compatible with some clues or evidence that speaker has at the time of speaking.*

A situation that fits this reading is found where someone is looking for John as in (29) or in (30)

(29) A: Do you know where John is? He is supposed to be here jogging with us.

B: He can be swimming. He said he is taking swimming lessons this month.

The speaker has no direct knowledge as to what John is doing and chooses to modulate his statement. If we accept the key meaning of *can* as compatibility, as suggested in Groefsema (1995)¹⁴, B's statement can be paraphrased as in (30)

(30) *My inference or conclusion that John is swimming now is compatible to my knowledge or evidence at hand.*

Secondly, a deontic reading involves a different situation. It has to do with giving permission of some kind and it may be directed toward John, the agent of swimming. In this case (27) can be paraphrased as in (31).

(31) *John's swimming is compatible with the social norm (or John is allowed to swim).*

Thirdly, on the circumstantial compatibility reading of dynamic modality, John's swimming is compatible with John physical skills and other circumstantial factors. The usual ability reading is part of this compatibility reading. On this reading, the speaker has a 'omniscient' perspective in that he/she knows all the conditions related to John's swimming, including John's physical conditions.

Fourthly, a situational potential reading is logically possible one and, if it should be available, it would describe a situation where something happens (usually in the future) naturally because of the potentiality of a situation. So it might carry an implication of inevitability. For instance, if someone has to swim to survive in a situation, then the situation has a high potential of actualizing the action. Consider (32)¹⁵:

¹⁴ Groefsema presents the following pragmatic conditions for *can* as shown below:

Can: p is compatible with the set of all propositions which have a bearing on p. (Groefsema 1995: 62)

¹⁵ This is the only example having the connotation of circumstantial

- (32) Guests must be scuba certified; for those who aren't, the lodge offers a three-hour course, so you can be sleeping with the fishes that same night. (COCA. Original source: Blale Guthrie 2011, Room and (not) bored, Atlanta Journal Constitution)

This example carries a tone of circumstantial necessity to a certain degree. This dynamic reading seems to imply that the addressee would do something naturally in accordance with a given circumstantial conditions. If we do not, we may be in trouble since it will mean that we are reversing the tendency imposed by circumstantial potentials. In comparison, the epistemic reading in (29) expresses our guess and reveals our shortage of information as to the event. The issue in (29) is whether the statement is nearly true or not; no action needs to be involved in (29) since it is epistemic; and no consequence follows from non-action since it is on a proposition level.

3.4 Epistemic vs Dynamic Modality

In this section we deal with some other obscure cases of modal statements. There are some ambiguous cases where distinction between epistemic and dynamic readings is not clearly seen. Perkins (1983: 35) observed that (33) can have both epistemic and dynamic modal meanings. Huddleston et al. (2002: 184) also pointed out that (34) can carry epistemic and dynamic modal meanings.

(33) Cigarettes can seriously damage your health.

(34) He might have killed her.

This paper claims that dynamic modality involves a

inevitability that I can find in my search of COCA.

'well-established' potential property of an individual object in question. Thus, the dynamic modal reading of (33) and (34) can be paraphrased roughly as in (35a) and (35b), respectively.

- (35) a. According to the well-established knowledge that cigarettes damage people's health, cigarettes have the potential¹⁶ to seriously damage your health.
- b. According to the known circumstantial factors, he or the circumstance itself almost brought about the situation of killing her.

On the other hand, when making epistemic statements, speaker qualifies his commitment as to the certainty value of a proposition because he/she is not sure of the truth of what he/she is saying (Lyons 1977, Perkins 1980). Thus, the epistemic modal reading of (33) and (34) can be shown as in (36a) and (36b), respectively.

- (36) a. According to limited information about cigarettes and your health, what I can infer is that the possibility of your being seriously affected by cigarettes is not precluded.
- b. According to my limited information about the accident, what I can infer is that the possibility of his having killed her is not precluded.

Epistemic reading presupposes lack of sufficient knowledge regarding the event in question and it implies that the statement

¹⁶ Potentiality can also imply that some appropriate circumstances should be provided. For instance, *Cigarettes damage our health* is not a precisely correct statement since it can be harmful only when they are smoked. In this sense of the word, *can* conveys an aspect of dynamic modality.

may not be true. On the other hand, the speaker using dynamic modality describes potentialities of an object as if he/she were an omniscient or well-informed person about the object or the situation in question.

4. Conclusions

We identified three domains for modality in English that can be defined in a mutually exclusive manner: social domain, mental domain, and dynamic domain. Especially, we claim that English dynamic modality can be identified as modality operating in the object domain with the modal force of potentiality of the objects being crucial in it. We have identified some forces applying to various objects including individuals and situations in the domain. We have also matched up each domain with corresponding source of forces related to various interpretations. Especially we suggested that dynamic modality should be able to distinguish between the subject-oriented and situation-oriented usages. This helps us approach modality in a comprehensive and coherent manner and solve categorization problems and related issues.

However, this paper has restricted itself to a few of the English modal auxiliaries and the proposals made in this paper need to be extended to other modal auxiliaries. In addition, the future research should also be able to deal with cases where merger of meanings of modal auxiliaries is apparent. This will involve a refined, systematic and sophisticated investigation into contextual information.

References

Brewer, N. 1987. *Modality and Factivity: One Perspective on the Meaning*

- of the English Modal Auxiliaries* (Unpublished doctoral dissertation). The University of Leeds.
- Brennan, V. 1993. *Root and Epistemic Modal Auxiliary Verbs* (Unpublished doctoral dissertation). University of Massachusetts, Amherst, MA, USA.
- Feldman, F. 1986. *Doing the Best We Can*. Dordrecht: Reidel.
- Greenberg, Y. 2002. Two types of quantificational modalized genericity, and the interpretation of bare plural and indefinite singular NPs. In B. Jackson, ed., *Proceedings of SALT XII*, 104–123. Ithaca, NY: Cornell University, CLC Publications.
- Groefsema, M. 1995. *Can, may, must and should: A relevance theoretic account*. *Journal of Linguistics* 31, 53–79.
- Kratzer, A. 1977. What ‘must’ and ‘can’ must and can mean. *Linguistics and Philosophy* 1, 337–355.
- Kratzer, A. 1981. The notional category of modality. In H. J. Eikmeyer and H. Reiser, eds., *Words, Worlds and Contexts*, 38–74. Berlin: de Gruyter.
- Huddleston, R. and G. K. Pullum, 2002. *The Cambridge Grammar of the English Language*. UK: Cambridge University Press.
- Langacker, R. 1987. *Foundations of Cognitive Grammar, Vol. 1*. Stanford, California: Stanford University Press.
- Lyons, J. 1977. *Semantics, Vol 2*. Cambridge: Cambridge University Press.
- Kim, Y–B. 2017a. A force–dynamic approach to modal auxiliaries in English. *Korean Journal of English Language and Linguistics* 17(1), 135–161.
- Kim, Y–B. 2017b. Remarks on epistemic *would*. *Discourse and Cognition* 24(3), 1–23.
- Palmer, F. R. 1986. *Mood and Modality*. Cambridge: Cambridge University Press.
- Palmer, F. R. 1990. *Modality and English Modals*. London and New York: Longman.
- Palmer, F. R. 2003. Modality in English: Theoretical, descriptive and typological issues. In R. Facchinetti, M. Krug and F. Palmer, eds., *Modality in Contemporary English*, 1–17. New York: Mouton de Gruyter.
- Perkins, M. R. 1980. *The Expression of Modality in English* (Unpublished doctoral dissertation). CNA.
- Perkins, M. R. 1983. *Modal Expressions in English*. London: Francis Pinter.
- Portner, P. 2009. *Modality*. Oxford, UK: Oxford University Press.
- Quirk, R., S. Greenbaum, G. Leech and J. Svartvik. 1985. *A Comprehensive Grammar of the English Language*. London: Longman.
- Radden, G. and R. Dirven. 2007. *Cognitive Grammar*. Amsterdam and

- Philadelphia: John Benjamins Publishing Company.
- Sweetser, E. E. 1990. *From Etymology to Pragmatics: The Mind-as-Body Metaphor in Semantic Structure and Semantic Change*. Cambridge: Cambridge University Press.
- Talmy, L. 1988. Force dynamics in language and cognition. *Cognitive Science* 12, 49–100.
- Talmy, L. 2000. *Toward a Cognitive Semantics, Vol. 1*. Boston: MIT Press.

Examples in: English
Applicable Languages: English
Applicable Level: Tertiary

Kim, Yong-Beom
Department of English Language and Literature
Kwangwoon University
20 Kwangwoon-ro, Nowon-gu
Seoul, Korea
Tel: 02) 940-5366
E-mail: ybkim@kw.ac.kr

Received: July, 2017
Revised: November, 2017
Accepted: December, 2017