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On epistemic and deontic grounding

Abstract

The cognitive analysis of the grounding predication has had a marked tendency to shift to the epistemic side of the phenomenon – to the extent that the grounding predication as a whole is now often referred to as *epistemic grounding*. This paper proposes to investigate the reasons for this shift, seen as rooted in the history of the research and the nature of the phenomena involved, to draw a dividing line between the epistemic and the deontic components of the grounding predication and to show that the deontic component, although in a sense subordinate to, and in many ways different from the epistemic side, is nevertheless rightfully considered to be an independent part of the grounding predication.
Keywords: epistemic grounding, deontic grounding, modal, metaphorical extension, cognitive predicate, direction of fit

1 Modal auxiliaries and the grounding predication: the shift to epistemicity

In the history of the cognitive analysis of the grounding predication attention has tended to shift, for various reasons, to the epistemic side of the phenomenon – to the extent that the deontic element came to be almost fully disregarded and the grounding predication as a whole is now often referred to as establishing *epistemic grounding*.

This paper has three aims: it proposes to investigate the reasons for this shift, seen as deeply rooted in the history of the research itself and in the nature of the phenomena involved, to draw a dividing line between the epistemic and the deontic components of the grounding predication and, finally, to show that the deontic component, although in a sense subordinate to, and in many ways different from the epistemic side, is nevertheless rightfully considered to be an independent part of the grounding predication.

Cognitive grammar defines epistemic grounding as a category that relates (the linguistic expression of) a process or a thing (a verb [clause] or a noun) to the situation of its use: speaker/hearer knowledge, and time and place of utterance. The latter are subsumed under the term *ground*.

Semantically, the grounding predication will give conceptual integrity to a clause. Formally, it is the category that gives a clause finiteness. In Langacker (1987) the grounding relationship is given a definition that highlights both of these sides:

(i) An entity is epistemically grounded when its location is specified relative to the speaker and hearer and their spheres of knowledge. For verbs, tense and mood ground an entity epistemically; for nouns, definite/indefinite specifications establish epistemic grounding. Epistemic grounding distinguishes finite

verbs and clauses from nonfinite ones, and nominals (noun phrases) from simple nouns (Langacker 1987: 489).

In Langacker (1991) the formal or technical side is emphasized:

> (ii) [Grounding is] a semantic function that constitutes the final step in the formation of a nominal or a finite clause. With respect to fundamental "epistemic" notions (e.g. definiteness for nominals, tense/modality for clauses), it establishes the location vis-à-vis the ground of the thing or process serving as the nominal or clausal profile (Langacker 1991: 549).

As suggested by this definition, apart from Tense, for Langacker the grounding relationship is established first and foremost by the modals.[1]

The (re)discovery of the grounding predication, the linguistic realization of this relationship, by cognitive linguistics – a usage-based grammar that discards the autonomy of the linguistic system and the principle of strict compositionality (cf. Langacker 1987, 1991 etc.) was a major step towards a systematic investigation of syntactic structures in terms of the symbolic relationships between language use and linguistic forms. One development in the process was a renewed interest in the so-called non-propositional elements of the predication such as the *neustic* (an epistemic component) and the *tropic* (a deontic component), as opposed to the *phrastic* (the propositional content) described in e.g. Hare (1971).

The most obvious candidates for expressing such relationships are the modals, so attention first focussed on them (e.g. Sweetser 1990). Since Sweetser was investigating the possibility of metaphorical extension in the modal auxiliaries, another natural consequence was the assumption that, in addition to its significance in lexical processes, metaphorical extension can play a significant role in the development of grammatical relations and grammati-calization as well. But it also turned out that metaphorical extension in grammatical categories may not always be as straightforward as in the lexicon.

With the first attempts at extending the term to languages other than English, the question was also raised whether other categories (cognitive predicates (Pelyvás 1996, Mortelmans 2002, 2006, Cornillie 2006) or modal adverbs (Hoye 1997) can also function as grounding predications.[2] This extension, if accepted, can lead to a more detailed investigation of the grounding predication (cf. Section 2), of the motivation behind (some) syntactic processes and, in the long run, to a fuller understanding of how humans endeavour to understand and also shape the world that surround them.[3]

1.1   Sweetser on metaphorical extension in the modals

The earliest cognitive attempt to describe the system of the English modals in terms of metaphorical extension was Sweetser's (1990) study which, though not very successful, indicated that such a description of modals in terms of force dynamics (forces and barriers) is feasible but also showed that the procedures behind the extension may be far more elaborate in grammatical categories than in the general lexicon. She chose what she called the root (not strictly subdivided but usually deontic) domain as the source and described extension into the

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[1]   This is predominantly for formal reasons, as we will see in 1.2. For a detailed discussion of the sometimes undesirable consequences, see Pelyvás (1996, 2000, 2006).

[2]   This assumption is not in conflict with Langacker's (1987) conceptual definition (i) quoted above but clashes with the formal one (ii) in Langacker (1991).

[3]   E.g. through reinterpreting the term 'epistemic' to refer to the assessment of a situation as a whole (creation of an ICM: *What is happening?*).

epistemic domain (target) in terms of simple rules following the workings of forces and barriers:

> **1.** In both the sociophysical and the epistemic worlds, *nothing prevents* the occurrence of whatever is modally marked with MAY*;* the chain of events is not obstructed.

> **2.** In both the sociophysical and epistemic worlds, there is some background understanding that if things were different, something *could* obstruct the chain of events. (Sweetser 1990: 60)

> In 'John may go' *John is not barred by (my or some other) authority (in the sociophysical world) from going.*

> In 'John may be there'. *I am not barred by my premises from the conclusion that John is there.* (Sweetser 1990: 61)

Although this treatment raises a number of serious questions (including the non-observance of the Invariance Principle, no account for changing scopes of negation and also the practical problem that epistemic MAY was attested long before its deontic counterpart) and is criticized in detail in Pelyvás (1996, 2000, 2006, 2011), where an alternative analysis in terms of counteracting forces and scope changes is also suggested (for a discussion of the issues relevant here, see Section 2), this analysis by Sweetser influenced later cognitive analyses to a great extent, especially in planting the idea that root (deontic?) and epistemic meanings are not substantially different from each other. This is reflected in Langacker's approach to the modals and in his formulation of the theory of epistemic grounding in general.

1.2   Langacker on epistemic grounding

1.2.1   The conceptual side

In his analysis of the conceptual structure of the modals, Langacker (1999: 307) emphasizes two properties:

they are force-dynamic

the event marked by the complement remains potential rather than actual.

> The profiled relationship involves some kind of effectiveness or *potency* tending toward realization of the type of action expressed by the complement but no actual instantiation of that action is implied (Langacker 1999: 307–308).

Thus the modal meanings develop as a result of the attenuation of subject control (progressive diffusion in the locus of potency). Then he argues that already in the root senses

> […] the source of potency is no longer associated with the subject, but is implicit and subjectively construed. It may be the speaker but it need not be […] It is not necessarily any specific individual, but may instead be some nebulous, generalized authority. In other words, the source of potency is highly diffuse.
> Nor is the subject necessarily the target of potency, which is also diffuse… (Langacker 1999: 308).

Epistemic modals are seen as

> […] widely diffuse in regard to the source and target of potency, hence transparent. I have described their potency as inhering in the *evolutionary momentum* of reality itself, as assessed by the speaker/conceptualizer (Langacker 1999: 309).

On closer examination, part of these statements are seen as applying primarily to deontic modals (e.g. *force-dynamicity,* cf. 2.1) and others as applying to primarily or exclusively to the epistemic ones (e.g. the source of potency is *'highly'* or *'widely' diffuse*). The overall effect on the reader is that the author assumes relatively little difference in conceptual structure and a smooth transition from deontic to epistemic modals. There are at least two arguments against this regarding the conceptual side:

• *The direction of fit.* Searle and Vanderveken (1985) argue that there is a substantial difference between what they call the *word-to-world direction of fit*, where the propositional content of the utterance fits the speaker's understanding of the existing state of affairs[4] in the world (epistemic sense) and the *world-to-word direction of fit*, where the world must change to match the propositional content of the utterance (deontic sense). These two attitudes seem to be substantially different if not incompatible: evidence from the uses of the modals shows that although there may be an ambiguity between the epistemic and deontic senses, there is no transition[5] between them.

• *Force-dynamicity* is certainly an essential property of deontic modals (cf. the discussion in 2.1, and also Figure 1), responsible for all of their semantic and grammatical properties: *typically sentient subject, imposed action, dual role of the doer,*[6] *no anteriority or simultaneity (no progressive or perfect forms).* All these properties disappear in the epistemic sense, suggesting that force dynamicity either disappears or takes a substantially different form in the metaphorical extension.

1.2.2 The formal side

The formal side of Langacker's definition of the grounding predication appears to be a major factor in the shift towards the epistemic in the grounding predication.

• Langacker (1991, 1999, 2004, 2011) regards the grounding relationship as a reference point construction, which clearly follows from its function of specifying a situation relative to speaker and hearer knowledge (cf. the first definition given in Section 1).

• As a reference point, *the grounding predication* (*Tense* or a *modal*) has a tendency to recede into the background once it has provided mental access to the target, *the grounded head* (the rest of the clause).

• Since a finite clause must profile a process and the grounding operation leaves only the grounded head in profile, the verb in the latter has to be able to profile a process if the clause is to be regarded as finite. In Langacker's system this condition excludes all forms that are clearly non-finite, e.g. *to- Infinitives* (since they are seen as summarily scanned and thus incapable of profiling a process) and also all forms that are clearly finite (since Tense is a grounding element and can only come from a grounding predication already present in the structure).

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[4] Searle and Vanderveken (1985) refer to *an independently existing state of affairs in the world*, but in cognitive theory truth judgements are seen as relative to the speaker's own construal of a situation (cf. Langacker 2004: 88).

[5] Or very little transition, cf. epistemic *should* with a 'deontic overtone', a blend of probability and desirability: *'They should be dead by now',* said by the man who planted a bomb in the victims' car. This can perhaps be interpreted as a blend of the two meanings, cf. Pelyvás (2006).

[6] Nominative and dative subjects alternating in some languages, as in Hungarian *KELL,* cf. Pelyvás (2011).

- This leaves only the English modals (all modals, epistemic, deontic and dynamic alike[7]) as grounding predications, since they are followed by a form that Langacker regards as neither finite nor non-finite and calls the *simple Verb* form. It excludes all modals in a number of other languages (e.g. German) on the one hand (followed by clearly non-finite forms), and also cognitive predicates with meanings that are very close to those of the modals (followed by clearly finite or clearly non-finite forms).

With only Tense (for all languages that have that category) or an English modal (which invariably carries Tense) permitted to function as a grounding predication, a curious situation arises. In addition to the incongruous language specificity of the restriction, it will permit only one grounding relationship in a clause, since no more than one modal can occur in a VP. In addition, it appears to be irrelevant whether its meaning is epistemic or deontic. This makes it very hard if not impossible to study the relationship between epistemicity and deonticity in the grounding predication.

1.2.3   The issues

The incompatibility of Langacker's broad conceptual/semantic definition of grounding and the severe restrictions imposed on the structure by his formal conditions[8] triggered reactions from cognitive linguists working with languages other than English as early as the 1990's.

The first reactions concerned language specificity. Pelyvás (1996, 2006), Mortelmans (2002, 2006) or Cornillie (2006) proposed to put the emphasis on the conceptual side and argued that all linguistic expressions that satisfy the semantic definition given in Langacker's first definition should be regarded as grounding predications,[9] including German modals, which take a form that is clearly non-finite (cf. Mortelmans 2006) or cognitive predicates with broadly epistemic meanings (cf. Pelyvás 1996, 2006), especially since they also exhibit exceptional syntactic behaviour that may be indicative of grounding predication status.[10] Since each view seemed to have theoretical advantages lost in the other, Langacker (2004: 85) suggested the compromise of talking about clausal grounding in the narrow vs. loose sense.

If, however, we move one step further and concentrate on the differentiation between grounding in the epistemic and the deontic sense and want to investigate their relationship, grounding in the narrow (Langacker's) sense is no help at all since two instances of a grounding predication in one VP are excluded there by definition.

In what follows I will be using the term in the 'loose sense' in an attempt to answer the following related questions:

- *Do epistemic and deontic meanings need to be separated?* This may not be a great problem if Sweetser's (1990) analysis is accepted as correct, but we have given two arguments in

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[7] We will not argue for the inclusion of a *dynamic grounding* for the reason that it would not satisfy Langacker's semantic definition. Dynamic modality is seen as subject oriented rather than speaker oriented.

[8] Cf. the two definitions given in Section 1.

[9] The main issues here are whether non-finite forms can perhaps profile a process, and whether a finite form is grounded by definition. In relation to the first, Pelyvás (2006: 127–128) argues that sequential vs. summary scanning can be redefined as terminal points of a gradient scale and that a non-finite verb, as a transitional form, can still retain enough sequentiality to qualify as marking a process. As for the second, in addition to the 'irregular' syntax of cognitive predicates, finite forms can sometimes express relative tense (e.g. in Hungarian subordinate clauses). Langacker (2010) also introduces the term 'quasi-finite' for subjunctive forms which, as he argues, do not establish grounding in the subordinate structure.

[10] We cannot go into more detail here since cognitive predicates only concern us in this argument as possible means of expressing more than one kind of modality/grounding in a single VP. For an extensive discussion of the issue, see Pelyvás (1996, 2006) or Mortelmans (2006).

1.2.1, concerning the direction of fit and force-dynamicity that suggest that this separation is both possible and necessary. The first one appears generally accepted to me and we shall return to a discussion of the second in Sections 2 and 3.

• *Is it conceptually possible to have two kinds of grounding operation in one VP?* There should be nothing to prevent this in theory provided that the two are indeed different but compatible with each other. There have been arguments that they are incompatible[11] since the meanings clash, as in (1):

(1)   *A policeman *may must can* ride a horse.

It is not difficult to see, however, that the three modals represent different kinds of modality and the sentence can be 'corrected' by replacing two of them with cognitive predicates, interpreting grounding in the 'loose' sense, i.e. assuming that cognitive predicates can also function as grounding predications:

(2)   a A policeman *may* have to be able to ride a horse.
        b Perhaps a policeman *must* be able to ride a horse.
        c Perhaps it is required that a policeman *can* ride a horse.

The two kinds of modals are seen as hierarchically arranged (cf. Hare (1971), Searle and Vanderveken (1985), referred to in Section 1). The epistemic modal is the assessment of the probability of a situation by the speaker (or the validity of an ICM), while the deontic modal expresses the speaker's propensity to have a change brought about in an existing situation. The interaction of the two kinds of grounding can be seen quite well when negatives are also involved, as in (3):

(3)   You may not have to go there.

One interpretation of (3) is that, according to the speaker, the situation perhaps does not need to be changed at all (attributed to epistemic MAY). Another is that although the situation needs to be changed, the change to be brought about by the deontic element is perhaps not desirable (attributed again to epistemic may?).

In the next section we are going to take a closer look at the conceptual structures postulated for deontic and epistemic modals, using MUST as an example, in an alternative account proposed by Pelyvás (1996, 2006, 2011). We wish to find further evidence that deontic and epistemic modals, although metaphorically related, are substantially different in their conceptual structures, to the extent that they need to be treated as separate categories. In Section 3 we will also demonstrate that deontic modals (and cognitive predicates with a deontic sense) are also to be regarded as grounding predications.

2   An alternative account

The model offered in Pelyvás (1996, 2006, 2011) describes modals in terms of the dynamics of counteracting forces that are associated with the participants of the situation. It is more fine-grained than Sweetser's, in at least three respects:

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[11]   F.R. Palmer, oral communication (public lecture in 1990).

- only forces are used to retain potentiality and eliminate the rigidity of the barriers;
- the forces are consistently associated with the participants of a situation;
- the metaphorical extension is associated with a change of scope, which substantially rearranges the original force-dynamics and is largely responsible for subjectification.

2.1   The deontic sense

In the deontic senses the forces are active between the actual participants of the situation in hand (imposer of the obligation and the doer (the clausal subject) in MUST), with the speaker/conceptualizer only appearing in the situation through correspondence (as the imposer of the obligation). As we will see, this is very different from the epistemic senses where forces between the speaker/conceptualizer and the situation as a whole will become dominant: a scope change occurs in a process described by Langacker (1987, 1991, 1999) as subjectification (cf. 2.2).

This analysis of conceptual structure can be extended to cognitive predicates (e.g. *think, believe, expect*) as well, with many of them functioning in similar ways to the modals.

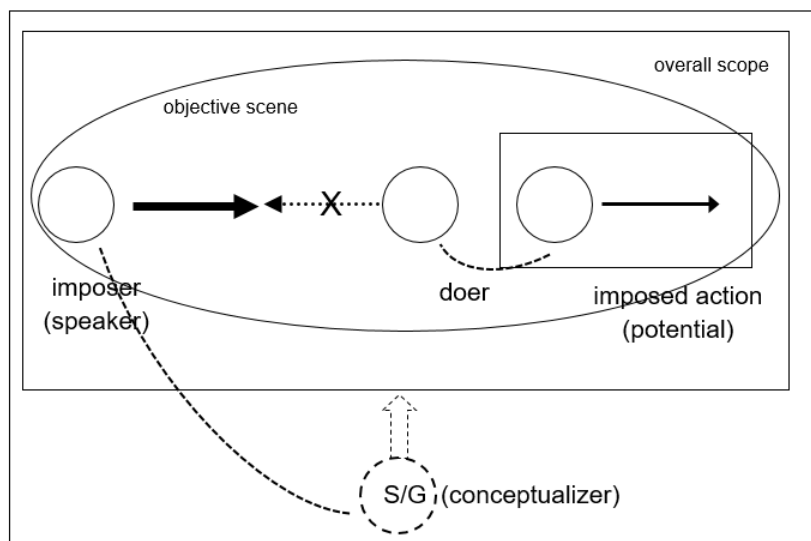The conceptual structure for deontic MUST is shown in Figure 1.

Figure 1. Conceptual structure for deontic MUST

Figure 1 introduces all the participants relevant to the deontic situation (*imposer of obligation* and *doer/performer* of the potential action) and associates forces with them, with the result that at least in the deontic senses the source and target of potency will not be seen as so diffuse as suggested in Langacker (1999: 307–308). The imposer is associated with the (compelling) force driving the action, but the role of the doer will not remain entirely passive either since he prototypically performs some sort of action imposed upon him by the imposer. In performing this action, the prototypical doer of an obligation has an agent-like role and can also be construed as active to some extent in the 'obligee' role as well, since the doer is normally reluctant to perform the imposed action, i.e. his force runs counter to the imposer's obligation. This force may appear relatively small or even negligible (depending, among other things, on the relative social status of the participants) but it is seen as the key factor in

making sure that the action remains potential.[12] At the same time, the doer has an inherently passive role as well: as 'obligee', he is at the tail end of the action chain representing obligation.

The conceptual structure obtained in this way consists of two portions. One is obligation, an interplay of forces of different strengths between two participants, the other is the potential *action* itself, which remains potential as a result of what happens in the *obligation* portion. Both are essential to the conceptualization of an obligation and need to be included in the immediate scope (marked as *objective scene* in Figure 1), with the status of the action portion depending on the outcome of the obligation portion.

This conceptual structure shows that two participants appear in double roles.

• The doer appears in the apparently passive role of the obligee and in the agentive role in the potential action.

• The imposer of the obligation is prototypically identical with the speaker. Pelyvás (2006: 140–141) argues in detail that in root modality this is correspondence rather than true identity (two distinct roles vs. one role) and that this is an important feature of root modals that distinguishes them from their epistemic counterparts.

2.2 *The epistemic sense*

There are two factors that play a decisive role in the metaphorical extension of the root modal meanings into the epistemic domain: *a restriction of immediate scope (OS)*, and an associated extension of overall scope to include the speaker/conceptualizer directly, *in that role,* in the process known as *subjectification.* The differences are shown in Figure 2.

Restriction of immediate scope[13] (OS) is a prerequisite for any epistemic sense owing to the very different nature of the source and target domains.[14]

As we have seen, in deonticity a significant part of the objective scene was taken up by force-dynamic relationships between the doer of a typically purposeful action and a source of obligation/permission, typically associated with the speaker (indirectly, through correspondence with the speaker/conceptualizer of the ground). We have grammatical evidence of their existence (no anteriority, no progressive, only purposeful action in the root senses).

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[12] Experience shows that people tend to object to most things made compulsory for them even if the reluctance was not there before. One major difference between MUST and SHOULD/OUGHT (order and advice) is that in the latter the two forces are construed as being of approximately equal relative strengths.

[13] Sometimes this occurs as early as in the deontic meaning – cf. 'wide scope' deontic *should/ought* and the deontic overtone of the epistemic meanings that results from this, discussed in detail in Pelyvás (2001).

[14] The Invariance principle states that only those aspects of the source domain will be carried over in the extension that are compatible with the target.
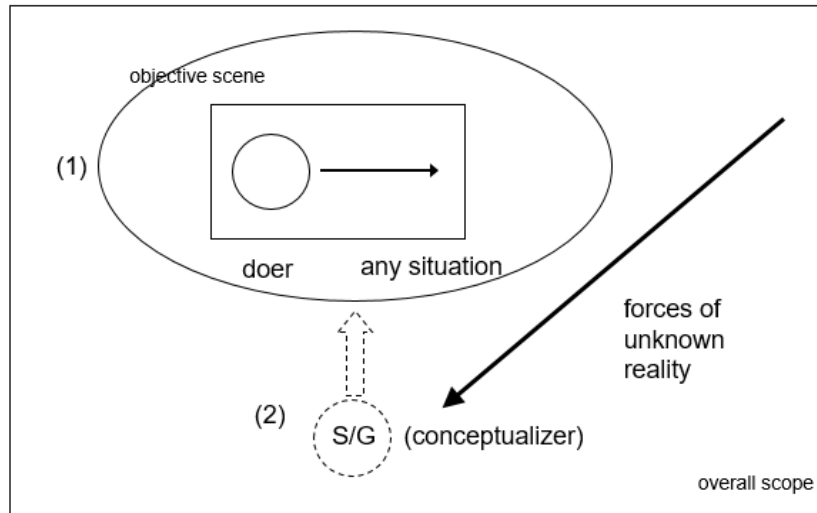
Figure 2. Conceptual structure for epistemic MUST.

In the epistemic sense these forces can no longer be interpreted in the same way, so the above restrictions on the grammar will no longer hold. As a result, the objective scene is *reduced* to include only the situation as a whole and the subjective component already inherent in the situation can become relatively more prominent as some objectively construed component, in our case subject control (associated with the double role of the doer), fades away in the process of subjectification.

Subjectification involves the extension of overall scope to include the speaker (S/G) directly, if only temporarily, as a reference point (cf. our discussion of grounding as a reference point construction in 1.2.2). – an essential ingredient of the grounding predication. This process is described with great precision in the passages related to *attenuation of subject control* quoted from Langacker (1999) in 1.2.1.

3   Summary: *similarities* and differences between the epistemic and the deontic senses[15]

• *Epistemic and deontic modalities are seen as the only linguistically significant speaker oriented modalities.* Since the rest are subject oriented, they have little chance of satisfying Langacker' conceptual definition of a grounding predication (partially repeated here for convenience).

> An entity is epistemically grounded when its location is specified relative to the speaker and hearer and their spheres of knowledge…(Langacker 1987: 489)

• *They both relate to a reality as conceptualized by the speaker rather than to some 'objective' reality* but, since the direction of fit (word to the world vs. world to the word) is different in them, their functions will also be different.

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[15]   In this section similarities will be marked with italics.

- In spite of some expectations, these modes are not incompatible since they appear to be working in a hierarchy *with one at least partially dependent on the other, sometimes in subtle ways,* cf. the discussion in Section 1.2.3 of (3), repeated here for convenience:

(3)   You may not have to go there.

Of special significance are the facts that epistemic MAY, in addition to its 'accepted' function, can also affect the 'desirability of effect' *component of the change to be brought about according to the deontic component* in a process similar to a blend. Deontic modality, on the other hand, implicates (pragmatically) that the speaker's reality is not the way (s)he intends it to be.

- *Although both senses are seen as speaker oriented,* there is a substantial difference in this respect between the two kinds of senses. Epistemic modality is speaker oriented by definition (in a weakly force-dynamic situation), whereas deontic modality may or may not include the speaker as a participant in a (strongly force-dynamic) situation. *It is curious that in the 'deontic overtone' of epistemic SHOULD and OUGHT (1.2.2 and Footnote 5) the weakly deontic element of 'desirability' or 'hope' is associated with the speaker, whereas in the usual deontic sense 'weak obligation' or 'suggestion' is not.* This can again be seen as a blend.

- *Although both senses are seen as being based on force dynamics,* force dynamicity has substantially different roles in them. It is the corner stone of the deontic senses *and there is reason to assume that its weakness or absence has a negative effect on the possibility of an extension into the epistemic domain.* Weakly force dynamic WILL (with no more than an implied counterforce to the subject's intentions in the form of discarded alternatives) only developed an epistemic sense in standard English by the 19th century (cf. Pelyvás 2008), and CAN (first attested with the auxiliary meaning 'to know how to do anything, to have learned, to be intellectually able' in 1150), where intention is absent and any action that may appear is no more than potential, is still struggling in standard British English for recognition in an epistemic sense (Pelyvás, to appear).

   In the epistemic senses, owing to the inevitable scope change associated with subjectification (cf. 2.2), the only interplaying forces remaining highlighted are the ones between the speaker's probability judgements (or possibly his/her choice of a relevant ICM) based on the evolutionary momentum of reality on the one hand, and the forces of unknown reality on the other. These senses appear to me to be far less force-dynamic than the deontic senses, *but their development somehow appears to depend on the original force dynamics of the root (deontic) senses* .The motivation behind this phenomenon, if real at all, will of course require further study[16] but if the assumption is correct, it could be strong evidence that *deontic and epistemic modalities are more strongly related to each other than to subject-oriented modalities, giving at least a hint that they are both part of the grounding predication.*

- In deciding whether the deontic element can be regarded as a more or less independent factor in the grounding predication a final consideration is the one that made posing the question possible: the relationship of modal auxiliaries and cognitive predicates. In this study it was taken for granted that cognitive predicates can function in a grounding role, and *closer examination shows that this is possible in both the epistemic and deontic senses.* Ambiguity or even a transition is possible, as in (4):

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[16]   The first hint is of course that they are more directly related to the speaker than the rest.

(4)   a I expect John to apologize.
        b I expect John to be careful.
        c We expect John to another five inches.

(4a) is a deontic sense, (4c) is clearly an epistemic one, and (4b) can be easily interpreted both ways. There is no preference for a modal in any of these cases – which *suggests that there may not be a difference of status between them.*

The difference is that some elements of the conceptual content associated with modals remain hidden or implicit in grammatical structure, such as the act of permission or obligation itself, or the fact that obligation in deontic MUST or permission in MAY prototypically come from the speaker. These are elements of the permission/obligation portion, while the potential action remains explicit. This is readily explained if we think of modals as reference point constructions, which normally provide mental access to a target and are often backgrounded or omitted altogether when the target has been reached. These factors are revealed with a cognitive predicate in the sentence, as in sentence (6), which is essentially equivalent to sentence (5):

(5)   You may use my car to go to the disco tonight.

(6)   I permit you to use my car to go to the disco tonight.

A cognitive predicate, on the other hand, can make implicit some elements of the action scene, as if taking for granted that the obligation is obeyed:

(7)   The sergeant ordered his men into the icy water.

There is little doubt that the order was obeyed.

We can draw the final conclusion that the grounding predication, with its epistemic and deontic content, must always be present in the sentence, with the function of anchoring what is said to the speaker's conception of reality in two different ways.

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