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Paper Three

Linguistic Modality as Expressions of Social Power

Abstract: The semantics of the linguistic modals is argued to be determined mainly by the power structure of the participants in the interaction. In the deontic uses of the modals, another determining factor is the expectations of the participants' attitudes towards the relevant action. By viewing the evidence as a power in its own right, our analysis can be generalized to the epistemic uses in a coherent way. The epistemic uses are seen as pragmatic strengthenings of the deontic uses, rather than as metaphorical mappings.

1. Introduction

It was a warm day. A wasp suddenly came in through the car window, irritating the two persons in the front seat.

Driver:	Kill it!
Passenger:	Must I?
D:	Well, *I* can't, since I'm driving.
P:	I don't want to.
D:	Let it live and get stung, then.

In traditional linguistics, one tends to focus on the *linguistic expressions*, which leads to the identification of grammatical classes. One example is the class of modal verbs, like *must*, *want to*, *let* and *can*, which is traditionally delimited by its *syntactic* properties. The conceptual representations underlying the linguistic expressions is

Together with Peter Gärdenfors.

only considered as a secondary problem.

Our focus is different: we want to analyze the cognitive *functions* of modals and their relations to other cognitive functions. This analysis will be coupled with a study of how the linguistic expressions of the relevant cognitive functions are related to other linguistic expressions.[1] We will argue that the relevant cognitive functions determining modal expressions are interpersonal *power* relations and the *expectations* of the agents involved in the speech situation.

For example, when somebody says *I must go now*, she[2] indicates that the listener has some power over her, and that the listener expects her to stay, but there is some other stronger power that forces her to leave. Our aim is to provide a systematic analysis of how different power relations and expectations can account for the conceptual structures underlying the semantics of modal expressions.

This is an example of what is called the *deontic* use of modals, where the powers are situated in the actual speech situation. Linguists have traditionally also pointed to what they call *epistemic* uses of the same modal verbs, where the necessity or possibility of the proposition is concerned rather than obligations or permissions. A clear epistemic use would be *He may be home by now*. There are also well-known sentences that can be given two interpretations, like *He must be home now*, where the (apparent) ambiguity is made clear by the two continuations (a) *...because his mother says so*, and (b) *...because the light is on*.

1.1. Power relations as a mechanism for the cognitive structuring of the linguistic modal field

Interpersonal power relations play an important role in our everyday social interactions. Parents use their power over their children,

1. Cf. the two approaches outlined in Tomlin (1995): studying how linguistic representations reveal or constrain conceptual representations, versus studying how conceptual representations are mapped into linguistic representations.

2. In this paper, "he" means "she" unless the converse is more natural. Similarly, "she" means "he," with the same proviso.

employers over their employees, teachers over their pupils, and more subtly perhaps a wife over her husband.

These power relations are as ubiquitous as they are implicit: it is very rare to see the subordinate *explicitly* challenging the power, although the tacit power structure is well known to all of us. The power structure is constantly being stabilized, confirmed, questioned, and sometimes challenged through our interactions. Linguistic utterances are one means to express these relations, as are actions, body language, etc.

If somebody, for example, asks his boss to open the window, despite the fact that he could have done it himself, this challenges the power the boss has *as a boss*. This power does not explicitly govern the opening of windows, but gives him an overall higher status. If he agrees to open the window, he has done more than that: he has agreed (or at least seemed to agree) to adjust the power structure by creating a precedent that can be used in further interactions.

The outcome of this negotiation largely depends on the expressions we use. It is highly unlikely that the boss agrees if we just point with a finger at the window, which is perhaps the way *he* does it, when he wants *us* to open the window. As will be seen below, there is a large scale of expressions ranging from this finger pointing via imperatives to modals and interrogatives[3] to choose from, depending on the different power structures – and, of course, depending on the different speech act situations.

In traditional linguistics, this class of relations falls among the pragmatic structures, pertaining to the speech act situation. As they are not thought of as being explicitly encoded in the language, they are not often studied. The claim of this paper is, however, that the power structure of a speech situation may be productively studied as being coded by a fairly limited set of linguistic expressions – the modals.

Even in more cognitive approaches (Lakoff 1987; Langacker 1987), using image schemata, the linguistic structures that code

3. Or "whimperatives" after Sadock (1970).

power relations have not been recognized. The one notable exception is Talmy's (1988) analysis in terms of *forces*, which will be our point of departure.

At this stage, our main purpose is to show how an analysis in terms of power, attitudes and expectations can account for the semantics of the modal field. As a consequence of this analysis, it will turn out that, by accepting *evidence* as a separate power, the so called epistemic usages of modals can be seen as a systematic transition from the deontic expressions.

Language excerpts in this article will be mainly in English in the methodological part and in Swedish in the more formal analytic part.

1.2. The linguistic modal field

Most earlier linguistic analyses[4] have started from a morpho-syntactic recognition of the modal auxiliaries as a relatively closed class. Limiting the analysis to these surface criteria blocks the recognition of the power field as a determining semantic factor.

Palmer (1979) cites the 'NICE' properties:[5] **N**egative form with *n't* (*I can't go*), **I**nversion with the subject. (*Must I come?*), '**C**ode' (*He can swim and so can she*), **E**mphatic affirmation (*He will be there*) and adds No *-s* form for 3rd person singular (**mays*), Absence of non-finite forms (No infinitive, past or present participle) (**to can*, **canning*), No cooccurrence (**He may will come*).[6]

There are thus several morpho-syntactic criteria which are traditionally used to define the modal verbs. Since the modals emerge as a homogenous class on these criteria, it is difficult to free oneself from considering them, and adopt the cognitive and pragmatic perspective that we prefer. The difficulties reside in the impossibility of modelling a cognitive situation *independently* of the linguistic expressions associated with it.

4. E. g. Palmer (1979; 1986).
5. These are the English modal features. Swedish, as well as many other languages, has a similar but different set.
6. Some examples added.

A semantic distinction that has long occupied both linguists and philosophers is that between the *deontic* and the *epistemic* uses of modals. Above we gave the apparently ambiguous example *He must be home now*. Our aim is not primarily to analyze linguistic expressions, but to go the other way round, i.e. to seek a linguistic *production* model, where the cognitive structure determines the linguistic structure. Hence, the ambiguity in question causes no problem for us: the cognitive model never contains this form of ambiguity.

Here it is important to notice the interdependence of the development of language and the cognitive basis – there would be no modal expressions unless there was something to express. But on the other hand, there are no means of *forcing* the language to express a certain cognitive function – language changes slowly and requires a collective need. In this perspective, the evolution of the modals from manipulative to deontic (syntactically marked as auxiliaries), and further on to epistemic uses is not trivial (cf. Traugott 1989). In our analysis, we will in particular focus on this last change, from deontic to epistemic, and what is needed for a language community to *accept* the epistemic uses.

1.3. Force dynamics

The major contribution to a cognitive approach to the modal field is Talmy's (1988) "force dynamics." Talmy recognizes the concept of force in such expressions as (1) and (2). He also notices the possibility in language to choose between what he calls force-dynamically neutral expressions and ones that do exhibit force-dynamic patterns, like in (3) and (4).[7] Forces are furthermore taken as governing the linguistic causative, extending to notions like letting, hindering, helping, etc.

(1) *The ball kept (on) rolling along the green.*
(2) *John can't go out of the house.*
(3) *He didn't close the door.*
(4) *He refrained from closing the door.*

7. Examples from Talmy (1988:52).

In his analysis, *physical* forces are seen as more fundamental than the social. By metaphorical extension, the expressions used to express physical forces are used in the "psychological, social, inferential, discourse, and mental-model domains of reference and conception" (1988:49, the abstract). His aim is to complete the list of "certain fundamental notional categories [that] structure and organize meaning" (p. 51), and he mentions number, aspect, mood and evidentiality.

Talmy's dynamic ontology consists of two directed forces of unequal strength, the focal called "Agonist" and the opposing element called "Antagonist," each force having an intrinsic tendency towards either action or rest, and a resultant of the force interaction, which is either action or rest.

> All of the interrelated factors in any force-dynamic pattern are necessarily copresent wherever that pattern is involved. But a sentence expressing that pattern can pick out different subsets of the factors for explicit reference – leaving the remainder unmentioned – and to these factors it can assign different syntactic roles within alternative constructions. (p. 61)

One big, mostly methodological, difference between our approach and Talmy's is that we do not view the prime function of language as *describing*, but rather as *acting on* the world. In this vein, Sweetser (1990:65) writes:

> The imposing/reporting contrast has interesting parallels with Searle's (1979) assertion/declaration distinction; like certain other (rather restricted) domains, modals are an area of language where speakers can either simply describe or actually mold by describing.

The distinction between the acting and the describing functions will provide us with a richer structure in the modal field, as well as a clearly visible connection to other moods, such as the imperative.

Talmy's analysis of the English modals starts with a recognition of the modals according to the morpho-syntactic properties discussed above. Talmy's aim is to see how the linguistically delimited set of modals can be analyzed in terms of force dynamics. In contrast, we start out from a semantic representation and expand the set of linguistic expressions coding this field. However, like we do, he lets the analysis work backwards, which permits him to extend the very limited group of traditional modals by some other related verbs, like *make*, *let*, *have*, *help*, but still with support from morpho-syntactic properties.[8]

1.4. Power instead of force

In contrast to Talmy, we view social power relations as semantically fundamental, and physical forces as derived. It is above all our speech act centered approach that has led us into the power play of cognitive agents, and we will argue that the epistemic use of modals is better understood by viewing this phenomenon as power rather than forces. We readily admit a great influence from Talmy's force dynamics, but we have found that the *attitudes* we discuss, and above all *expectations about these attitudes*, are more adequately accounted for in terms of social power than in terms of physical forces.[9]

8. It is difficult to differentiate between the analysis of Talmy and Sweetser (1990), partly because both Talmy's paper and Sweetser's exist in earlier versions (Talmy 1981 and Sweetser 1984) giving them possibility to base their analyses on each other. Sweetser's main contribution seems to be the extension from deontic (root, as she calls it) to epistemic modality (see below). Sweetser (1990) is based on an earlier work, Sweetser (1984), which is in turn based on Sweetser (1982). We will throughout only refer to the former.

9. Talmy is not by any means unaware of some of the wider uses of forces/power, and he writes: "In addition, FD [force dynamic] principles can be seen to operate in discourse, preeminently in directing patterns of argumentation, but also in guiding discourse expectations and their reversal." (Talmy 1988:50)

2. Power relations and their linguistic expressions

The main justification for our choice of semantic primitives derives from the fact that language is not autonomous. It is a tool to be used in a *social context*. The social context is partly determined by the power relations between the agents. We believe that linguistic modal expressions are primarily expressions of such power relations.

The semantics for modal expressions that we will present here is fundamentally *cognitive*. Unlike most works in the area of cognitive semantics (Lakoff 1987; Langacker 1987), we will not use image schemas to describe the meanings of modals, but our semantic primitives will be power relations and expectations.[10] Our goal is to describe a *production model* for modal expressions, where we start from cognitive representations of speech situations and use them to generate prototypical linguistic utterances.

According to our analysis, the central elements of the speaker's and the listener's mental representations are the social power relations that hold between various agents. The objects of power are actions, for example the action of killing the wasp. I can kill it myself, but if I have power over you, I can also command you to do it. Another important factor of a speech situation is the agents' *attitudes* to the relevant actions.[11] For example, I may want to kill the wasp, while you may want that this action not be performed.

Apart from power relations, actions, and attitudes to actions, our semantic model also contains as fundamental notions different kinds of *expectations*. For an analysis of modals, the most important expectations are those that concern the attitudes of other agents towards the actions that are relevant in a speech situation. For example, I may not want to kill the wasp while I know that you

10. As will be argued below, image schemas and power relations are compatible, and our analysis may well be represented in a notation similar to Talmy's force dynamic schemas.

11. Attitudes to actions concern the agents' *preferences*, and should not be confounded with so called *propositional attitudes*, e.g. believing or hoping.

are my superior. I must thus consider your attitude towards killing the wasp. If I don't *know* it, I must act on my expectation about your attitude.

2.1. Deontic and epistemic uses of modals

In our semantic analysis, the distinction between the deontic and the epistemic uses comes out very naturally as will be seen below.

The general development of meanings in this area can be illustrated by the following example from Lyons (1982:109), who distinguishes between four stages for the example *You must be very careful*:

(1) You are required to be very careful (deontic, weakly subjective).
(2) I require you to be very careful (deontic, strongly subjective).
(3) It is obvious from evidence that you are very careful (epistemic, weakly subjective).
(4) I conclude that you are very careful (epistemic, strongly subjective).[12]

Furthermore, it is quite clear from the analysis that the deontic meaning is the primary and the epistemic the derived one, as is supported by etymological evidence. For example, Traugott (1989) writes:

> It is for example well known that in the history of English the auxiliaries in question were once main verbs, and that the de-

12. Here it is interesting to see the importance of the choice of analytical dimensions. No one has protested against the subjective dimension presented as continuous, but several people have had difficulties to see the gradual transition from deontic to epistemic, which we have proposed in earlier versions of this paper. In fact, a more productive way of viewing the subjective dimension is as a contrast unmarked/marked. However, the subjective dimension need not bother us here, since it has to do with what referents are implied by the situational context (cf. Grice 1975:56–7).

> ontic meanings of the modals are older than the epistemic ones.[13]

Both Sweetser (1990) and Talmy (1988) view the epistemic use of modals as a *metaphorical* extension of the deontic use. Calling the deontic use the "root-modal meaning," Sweetser says (1990:50):

> My proposal is that root-modal meanings are extended to the epistemic domain precisely because we generally use the language of the external world to apply to the internal mental world, which is metaphorically structured as parallel to that external world.

Our approach is more similar to that of Traugott (1989) who argues that the epistemic use of modals can be seen as a strengthening of *conversational implicatures*. The term implicature is used since Grice (1975), mainly in linguistics and philosophy of language to mean roughly that which can be concluded from the statement and from the context in which it is uttered. We want to view implicature as a kind of expectation. The reasons for this are that (1) they are not normally explicitly stated, (2) they can be used as premises in reasoning and (3) they are valid until overridden by explicit statements or stronger expectations (cf. Gärdenfors 1994).

The expectations generated by conversational implicatures will play a crucial role in the transition from the deontic to the epistemic use of modals. When the evidential material contained in the expectations is viewed as a power that is detached from the speakers, it can take the role of a non-negotiable power. As will be seen below, the diachronic semantic shifts proposed by Traugott can be explained by a similar externalisation of expectations.

2.2. Semantics based on social interactions

In cognitive semantics, the central notion has been *image schemas* (Langacker 1986; 1987; Lakoff 1987). We believe that our notation

13. See also Sweetser (1990:50).

yields a satisfactory analysis without including the general framework of image schemas. However, the two approaches are compatible, in the sense that image schemas could be extended to model power relations.

Talmy (1988) comes much closer to our analysis with his "force dynamic" semantics. In contrast to us, Talmy views the physical force dynamics as the basic and the extension to psychological and social references as metaphorical (1988:69 and 75). Still he remarks that "[a] notable semantic characteristic of the modals in their basic usage is that they mostly refer to an Agonist that is sentient and to an interaction that is psychosocial, rather than physical, as a quick review can show" (1988:79). We completely agree, but see this as an argument for the primary meaning of the modals being determined by social power relations, while the (few) uses of modals in the context of physical forces are derived meanings. Independently of this argument, Talmy's directed forces are not sufficient for our analysis, since they cannot handle the nested expectations of the agents that we will argue are required for a production model of modal expressions.

Within the philosophical tradition, earlier analyses of modal expressions have, almost exclusively, been based on possible worlds and relations between worlds as semantic primitives. Indeed, the first modal notions to be analyzed were those of necessity and possibility. There is nothing in the structure of possible worlds semantics that is suitable for describing social power relations, but such features must be added by more or less *ad hoc* means.

One notable exception in the philosophical tradition is Pörn (1970) who starts out from a sentential operator D_i, where an expression of the form D_ip is read as "the agent i brings it about that p," where p is a description of a state of affairs. Using this operator, Pörn then discusses "influence relations" (1970, ch. 2) of the form D_iD_jp, which he reads as "i exercises control over j's doing p" (1970:17). However, he focuses on rights and power relations and only marginally discusses the use of this formalism to analyze mod-

al expressions. Furthermore there is no correspondence to our notion of expectations in his analysis.

We conclude that neither a cognitive semantics based on image schemas nor a possible worlds semantics is appropriate for an analysis of the pragmatics of modals. Modals are primarily expressions of social power relations. We view the meaning of modals as determined by their *function* in the speech act situations governed by the power relations.

Furthermore, we claim that an analysis of the speech act situations where modals occur cannot be completed without taking such power relations into account. For example, Talmy (1988) views utterances in the first or second person involving modals as parallel to sentences in the third person with the same modals. In contrast, our position is that first and second person utterances involving modals are primary since they are speech acts, i.e., *moves* in a "language game" with the *stakes* given by the social relations that include the assignment of power, while third person expressions are secondary *reports* of such moves (cf. Sweetser 1990:65, quoted above).

3. Central elements of the cognitive structure

3.1. Actors

The social relations in the speech act analysis that we have undertaken can be described along two dimensions. The first dimension is the one pertaining to the social power relation, i.e., who has power over whom. The second is the one defining the roles in the speech act, i.e., who speaks to whom.

The two primary roles in the power dimension are (1) *the one in power* and (2) *the obedient*. The power relations manifest themselves by threats (mainly implicit) of punishment. We will assume that the relevant relations between the actors are settled for the speech situation we will be analyzing. This is an idealizing assumption, since the language game can change the relations, but it al-

lows us to study a momentary power structure. We will further discuss the assumption below.

The speech act dimension consists primarily of the roles of the first, second and third person. As will be seen below, the third person role occurs most frequently with the epistemic uses of modals. We also assume that the speech acts are governed by standard conversational maxims.[14]

The power dimension and the speech act dimension can be combined in four different ways:

(1) The speaker is the one in power and the hearer is the obedient.
(2) The hearer is the one in power and the speaker is the obedient.
(3) The one in power is a third person and the speaker is the obedient.
(4) The one in power is a third person and the hearer is the obedient.

In cases (3) and (4), the third person can either be a real person or an impersonal power (cf. Benveniste 1966).[15] The epistemic use of modals involves a special case of such an impersonal power, namely, the power of the *evidence*. The four cases constitute different cognitive situations which will generate different linguistic expressions involving modals. As will be seen below, the connections

14. For example, the cooperative principles of Quantity, Quality, Relation and Manner, proposed by Grice (1975). An example of Relation is the following (ibid.:51) A: I am out of petrol. B: There is a garage round the corner.

15. Benveniste (1946; 1956, reprinted in 1966) shows the frequent existence in different languages of a special morphology for the third person, which motivates his use of the term *non-personne* for this function of an actor standing outside the immediate language game. Since the third person is not present in the speech act, he will be referred to in an "objective" way and, consequently, his power will not be negotiable. Cf. Benveniste (1966:231; 256). Also cf. Austin (1962:63).

between modals and the cognitive structure are surprisingly systematic.

3.2. Expectations

Apart from the actors and their power relations, we also take the *expectations* of the actors as fundamental elements of the cognitive structure. Winter (1994) argues that a multitude of phenomena within cognitive science can be analyzed with the aid of expectations. In particular, Gärdenfors (1994) shows that the non-monotonic aspects of everyday reasoning can be explained in terms of underlying expectations. However, in the history of cognitive science, several concepts related to expectations have been proposed, like scripts (Schank & Abelson 1977), frames (Minsky 1975) and schemas (Rumelhart & McClelland 1986).

Expectations are *demands* in two ways. Firstly, the person having the expectation has a demand on the external world that it conforms to his expectation. The reason for this demand is that he has invested cognitive effort in creating the expectation, and he may also have built other expectations on it. Secondly, his investment leads to a demand on himself to check with the external world whether his expectation is fulfilled. The reason for this is that we act *as if* our expectations were true, as if unknown values were known.

If an expectation is not satisfied, it leads to a conflict for the person with the expectation. For example, Miss Julie may expect her butler to open the door for her, but he does not. There are two ways out of such a conflict. Either she exercises her power to make the world conform to her expectation or she changes her expectation to make it conform to the world. Which way is chosen depends, at large, on the power of the person having the expectation.

Linguistic expressions of modality primarily concern changes of the world, via actions, and thus power relations are central. In the case when the expectations are made to conform to the world, one faces a case of an epistemic revision (Gärdenfors 1988; 1994). In the latter case, however, the revision is not accompanied by linguistic

utterances since it involves a change of the cognitive state of one agent only.

3.3. Expectations about attitudes

The objects of the power relations that we are studying are the actions that are *salient* in the speech act situation.[16] If the situation consists of two thieves with dynamite in their hand facing a safe, the salient action is to blast the safe. We assume that both the one in power and the obedient are aware of what is the salient action and that the action can be performed by the obedient. The action can also be an omission (von Wright 1963), i.e., not preventing something from happening. For example, if the fuse for the dynamite has been lit, then omitting extinguishing the fuse can be seen as an action, and it can be the object of modal expressions: *Let the fuse burn!*

In order that a power relation be effectuated, i.e., that the obedient does what the one in power expects, the obedient must know the *attitudes* of the one in power towards the salient action. For example, if the obedient knows that the one in power wants the safe to be blasted, he will do so without further ado. If he does not know, he must act on his expectations about these attitudes, or ask the one in power. Such inquiries standardly contain modal expressions: *Shall I blast the safe?*

Even if there is always some form of power relation between two agents, these will not result in any linguistic utterances as long the expectations of the agents are well matched. It is only when the relevant expectations clash or when they are unknown that linguistic communication is necessary to achieve the appropriate actions.

16. Luckily we have an attention system which prevents us from having active attitudes towards all *possible* actions in our environment. As a matter of fact, it is the attention of the one in power that determines the saliency. Consequently, a source of incongruence of the attitudes of the actors is when the attention of the obedient is different from that of the one in power.

The one in power can, by definition, demand that his expectations about the salient action be fulfilled by the obedient. If his expectation is not fulfilled, this means either that the obedient does not know the attitudes of the one in power to the action or that the obedient wants to elude the obligation. The obedient can, by definition, never *demand* anything, but possibly negotiate with the one in power that he be let off doing the action.[17]

We will distinguish between three levels of expectations about attitudes towards an action *p*. These three levels seem to distinguish between all occurrences of modals that we have found:

(1) The speaker's attitude towards *p*.
(2) The speaker's expectation about the hearer's attitude towards *p*.
(3) The speaker's expectation about the hearer's expectation about the speaker's attitude towards *p*.

For example, in our paradigm situation (1) I want the safe to be blasted, (2) I expect that you too want the safe to be blasted and (3) I expect that you expect me to want the safe to be blasted. Consequently, since I am the one in power, I expect you to heedfully obey. If you do, this is the idyllic situation where all expectations are fulfilled. In such a case, nothing needs to be said, action speaks for itself.

However, if some of the expectations are not fulfilled, the incongruence will normally result in some linguistic utterance from the one whose expectation is violated. For example, if I am in power and you don't want to blast the safe and you expect that I do not want it, I will then say *You must blast the safe!*

17. The participants in a speech situation often have differing perspectives – they "don't see things the same way." Another aspect of power is that the one in power has the right to impose his perspective on the subordinate. Cf. Andersson (1994).

4. Formal analysis of the typical linguistic utterances generated by the cognitive structure

Our goal is to show how the cognitive structures of the agents in a speech situation can be systematically used to generate modal expressions. In other words, we start from speech situations consisting of different combinations of power and attitudes and predict which linguistic utterances *typically* emerge from these situations. The formal analysis contains variables specifying the action, the actors and the attitudes that the actors have towards the action.

4.1. The variables

The action
The action is typically salient in the situation, and the subordinate person has the ability to perform it. As our formal system is seen as corresponding to a cognitive representation, we have chosen *p* as standing for the action, rather than VP and related notations used in most linguistic contexts. A non-controversial *p* is then to blow a safe (i.e. non-controversial as a *p*), shut the TV off, open a window, kill a wasp – briefly, everyday simple actions.

Personæ
The first, second and third persons, 1, 2, 3, correspond to the normal I, you and the rest. (The plural is not considered.)

Attitudes toward p
We have elaborated the features designating the attitudes along the lines of Winter (1986) to be able to account for irrelevance and interrogation states, using + for positive inclination towards *p*, 0 for indifference relative to *p*, – for a negative attitude and ? for a relevant but unknown attitude.[18]

18. This '?' has caused us some problems. Contrasting examples like *You do want* p, *don't you?* and *You don't want* p, *do you?* show + and – hiding behind the question marks. In a more fine-grained analysis, we would thus need attitudes of the form $?^{+}$ and $?^{-}$.

4.2. Basic power patterns

We distinguish between two basic patterns. One in which only the speaker and the listener are relevant, and one in which a third actor outside the immediate speech act situation has an overriding power.

Two actors

When only the two interlocutors are present as powers, the analysis divides into two asymmetrical cases: (1) when the speaker is the one in power ($1 > 2$), and (2) when the speaker is the subordinate ($1 < 2$). The case where the powers are equal does not concern us directly, as our aim has been to methodologically enlarge the power differences to be able to analyze them.

The asymmetry arises, as we will see, due to the right of the one in power to have her needs satisfied – her attitudes are dominant and the subordinate's recessive in the sense that recessive here means that they are only accounted for if the one in power agrees.

Three actors

Earlier analyses (Talmy) have not considered cases where more than two (forces or) powers are involved. However, this distinction corresponds to a subgrouping among the modal verbs, as will be seen below.

Here, as in the case where we have only two forces, we make the same distinction between the speaker being in power ($1 > 2$, $1 < 3$) or not ($1 < 2$, $1 < 3$). The third power is always seen as the strongest. If not, we are back to the cases with two actors.

4.3. Analysis

Our aim in this section is to start from the most fundamental power structure, where the one in power only considers his own attitudes towards the action *p*, and then expand the analysis to cases where other attitudes are taken into account. By a series of examples, we will exhibit typical uses of different modal expressions.

We will start by studying the two actor case, and first assume that the speaker is in power. The one in power never *has to* consider the

attitudes of the subordinate. There are then two options: (1) she exerts her power non verbally by using the whip, or (2) she adopts the imperative mood and commands that *p* be done.[19] We will symbolize the second situation as follows:

$1 > 2$			
+	Ø	Ø	Gör *p*!
			Do *p*!

The main relation ($1 > 2$) indicates the speaker's greater power. The three first columns represent the speaker's attitude to *p*, the speaker's expectation about the hearer's attitude and the speaker's expectation about the hearer's expectation about the speaker's attitude, respectively. In this case, the second and third columns are irrelevant.

The first line of linguistic output is in Swedish, the second represents a translation of the Swedish output rather than a complete English output of the situation in question. Very often it is the case that the two coincide, but the goal has been to complete the analysis of Swedish modals.

If the one in power *does* consider the attitudes of the subordinate, the most general case is '?,' which indicates a relevant but unknown attitude.

$1 > 2$		
+	?	Vill du *p*?
		Do you want *p*?

Since it is assumed that the power relations are known to the actors, a question of this kind will, by conversational implicature, have the force of a command.

The next case is when the one in power expects that the subordinate has a negative attitude towards *p*.

$1 > 2$		
+	–	Du skall *p*!
		You must *p*!

19. Since the first situation is non-linguistic, we will ignore it in this text.

In this case, the interpretation is that 1, who has the power, expecting that 2 is negative to *p*, orders 2 to perform *p*, and by the modal verb *skall* 'must' indicates the expectation of 2's reluctance.

The happy case when the one in power expects that the subordinate has a positive attitude towards *p* will normally not lead to any linguistic output, because she will then just expect that 2 performs *p*:

1 > 2	
+ +	Ø
	Ø

The cases where 1 has a negative attitude to *p* can be analyzed in an analogous fashion.

Next, let us take a look at the corresponding versions with reversed power relations. One case is when the subordinate does not know the attitude of the one in power. The power structure, however, forces him to find out 2's attitude:

1 < 2	
+ ?	Vill du *p*?
	Do you want *p*?

Interestingly enough, this is the same phrase as in one of the cases above. However, since the power structure is different, it does not have the same conversational implicatures, but is now a genuine question. The difference between the two meanings is marked in the prosody: *vill* is more emphasized in the genuine question than in the imperative meaning.

In the case when one expects that 2's attitude to *p* is positive, the default is just to perform the action.

In the case when 2's attitude to *p* is negative, as in the following diagram, the default is to say nothing (and to *refrain* from doing *p*).

1 < 2	
+ –	Ø
	Ø

If the power structure is strictly respected, it is irrelevant (to the situation and the outcome of *p* or not *p*) no matter how much 1 wants *p* to be performed. But 1 can always *appeal* and try to get 2 to change attitude by informing 2.

+ – ?	Jag vill *p*.
	I want *p*.

The line reads: 'I want *p*, but I expect that you don't, but that is perhaps because you do not know that I want *p*.'

Similar kinds of appeals can also be used in the earlier situation when 1 does not know 2's attitude:

1 < 2	
+ ? 0–[20]	Jag vill *p*.
	I want *p*.
+ ? ?	Får jag *p*?
	May I *p*?

The subordinate has two ways to "straighten the question marks," either to inform the one in power of his own attitude, as in the first example, where he fears that 1 is perhaps negative. The second way is to ask about 1's attitude.

The reading for the tables containing *three* powers is somewhat different. Consider this case:

1 < 2, 1 < 3	
– – +	Jag måste *p*.
	I must *p*.

As before, the first column represents 1's attitude, the second equally 1's expectation about 2's attitude, but the third column now represents 1's expectation about a third and stronger power, that is not negotiable. The example reads: 'I don't want and I know that you don't want, but there is another stronger power over me that I can't refuse.'

20. 0– is interpreted as either 0 or –.

Due to the "objective" character of the third person, as described above, negotiation between the third person and any of the participants present in the speech act situation is not possible.

In the case where there is a discrepancy in attitude between 2 and 3, the attitude of the third power is always the strongest, being unchallengeable. The example below reads: 'I don't want *p*, you claim that I should *p*, but I may not *p* anyhow.'[21]

1 < 2, 1 < 3			
–	+	–	Jag får inte *p*. I may not *p*.
			Jag kan inte *p*. I can't *p*.

A general feature of all the examples above is that the power relations guide the *focus* of the speech situation – the one in power always has the right to be in focus and have her wishes satisfied. Hence, when 1 < 2, where the speaker is subordinate, the dominating forms will be interrogatives in the second person and indicatives in the first person. When 1 > 2, one finds the converse pattern. As a consequence, the power structure will govern the use of *pronouns* in the linguistic expressions.

4.4. Exceptions to prototypical power structure

The power relations we have assumed in the analysis above should be seen as a prototypical power structure. All *exceptions* from this indicate that the one in power does not immediately exert this power.

(1) A general social phenomenon is that power is not exerted without due cause. In the analysis above, we have already seen some cases of conversational implicature, where the one in power uses weaker means of expressing her attitude. This leads to a gradation in subtlety ranging from pure non-linguistic action and punish-

21. The difference between *can* and *may* in this context will be discussed below.

ment to almost completely transformed utterances, via imperatives and modal expressions.

A special case of this is when the one in power believes that the subordinate has an inappropriate (incorrect, says the Power) attitude towards *p*. It is always possible to force the other to submission, but not always socially acceptable. *Do you want* p*?* is not, by conversational implicature, as striking as *You must* p*!*, but may have the same effect.

An example of the phenomenon is that, instead of the direct command *Pass the salt!*, the indirect question *Can you pass the salt?* is often used. As a conversational implicature, the question entails that the speaker wants the hearer to pass the salt.[22] In literature oriented studies, ways of expressing conversational implicatures standardly belong to the realm of "style." In the present context, the choice of "style" can be seen as the way in which the speaker chooses to express power relations.

Givón (1989:153) gives the following example of a continuum between imperative and interrogative:

most prototypical imperative
a. Pass the salt.
b. Please pass the salt.
c. Pass the salt, would you please?
d. Would you please pass the salt?
e. Could you please pass the salt?
f. Can you pass the salt?
g. Do you see the salt?
h. Is there any salt around?
i. Was there any salt there?
most prototypical interrogative

(2) An *appeal* constitutes the subordinate's means to set aside the power relation. A case like the following, where 1 is the subordi-

22. We believe that the complex of politeness expressions is a game on establishing power relations involving delicate conversational implicatures.

nate should yield an immediate execution of *p*, as soon as 1 knows the will of the one in power.

1 < 2		
–	+	Ø
		Ø

But there is always the possibility of appeal:

1 < 2		
–	+	Får jag slippa *p*?
		May I be let off *p*?

(3) We have to differentiate between a negotiable (or at least potentially negotiable) power on the one hand, giving expressions like *Jag får inte spränga kassaskåpet* 'I may not blow the safe,' signifying that I am *not allowed* to blow the safe, and on the other, an absolute power involved in *Jag kan inte spränga kassaskåpet*, signifying that I can't do it, and there is nothing to do about it.

4.5. The role of the third power

Another consequence of the power structure is that the third person – the *non-person* – does not appear, except in declaratives. This means that there is a fundamental difference in meaning between *I want to go* and *He wants to go*, in that the first directly engages in elaborating the power relation in question, whereas the second is either a report of *another* power relation, or the speaker taking over the third person's role. (Cf. the acting/describing distinction mentioned in the introduction). The third person only appears in the three part relations and in the epistemic uses (see below).

One major difference between our analysis and earlier attempts (notably Talmy) is the introduction of a *third power*, a third part in the power relation, whose main feature is that it is not present in the very speech act situation, and therefore not immediately negotiable. The importance of this distinction is clear if one recognizes the separate subgroup of modal verbs appearing in three-part structures, notably *måste* and *bör/borde* (must and ought to).

Another feature that belongs to the realm of the third power is the modal adverbs of uncertainty, like *nog* and *kanske* (maybe). They are used in the place of questions to mark a relevant but unknown attitude of the third power, like in the following:

1 < 2, 1 < 3			
–	–	?	Jag kanske måste *p*.
			Maybe I must *p*.

Normally, such an uncertainty would result in a question, but as the third power is by definition absent in the speech situation, the information about its attitude towards *p* can not always be obtained.

5. Running the analysis backwards: prototypical meanings of (Swedish) modal verbs

After having seen some examples of the linguistic expressions generated by the power and attitude structure, we may shift our focus to the linguistic expressions produced and determine in what cases the different linguistic entities emerge in our analysis. Our objective is to set up a core "meaning" in terms of expectation structure for each of the modals.[23]

Claiming that the core meaning resides in the social power structure is in accordance with the linguistic evidence presented by Traugott (1989, and others) that indicate that the root meanings of the modals are social (rather than physical, which would support Talmy's view). The Swedish verb *skola* 'shall' derives, for example, from the same root as *skuld* 'debt.'[24]

One of our main theses is that the core meaning of the modal verbs is determined by a certain *pattern of expectations*. Such a pat-

23. The core meaning will only express typical cases of a general tendency, since the modal field is governed by so many gradual and continuous properties, as the example from Givón above shows.
24. Cf. O. E. **sculan*.

tern of expectations can occur in various power structures, but will be expressed by the same modal verb.

We will next give an analysis of the core meanings of the Swedish modals.

5.1. *Two actor modals*

Vill[25]

The expressions containing *vill* 'want to' typically occur in the expectation pattern +?, i.e. when the speaker wants *p* but is uncertain whether the hearer has the same attitude. For example, if the speaker is the subordinate, and the hearer the one in power (1 < 2), the speaker can say *Jag vill* p 'I want *p*' to mark his attitude and to signal that he is uncertain of 2's attitude. Or, in the reverse power relation (1 > 2), the one in power can, instead of directly exerting his power, say *Vill du* p? 'Do you want *p*?' when he expects that the hearer does not know his attitude. The speaker will then, by conversational implicature, expect that the hearer understands the speaker's attitude.

Vill is traditionally analyzed in terms of 'volition,' where volition would roughly correspond to a positive attitude in our account. However, applied to a real world situation, volition will produce *action* in the cases where nothing is in the way, and the *linguistic expression* will only emerge when the *hearer* is in power *and* has a negative or unknown attitude.

1 > 2		
+	?	Vill du *p*? Do you want *p*?
		Du vill väl *p*? You do want *p*, don't you?

In this example, the first case is unmarked and the second using the modal adverb *väl* marks the speaker's inclination towards expecting + –, i.e. the speaker is uncertain about 2's attitude, but weakly expects that she is negative.

25. Although the Swedish modals have an infinitive, examples will be represented by their verb stems.

Skall

The typical modal use of *skall* 'must' occurs in situations where the speaker is in power, with expectation patterns of the forms + – ?, + – 0, + – –, i.e. when the speaker wants *p*, he expects that the hearer does not want *p*, and he does not expect the hearer to have a *correct expectation* about his (=the speaker's) attitude. In this situation, *Du skall* p*!* 'You shall *p*!' is used to inform the hearer about the speaker's attitude, and to remind him of the power relation.

Nowadays, *skall* is mostly used temporally (paralleling the English temporal use of *will*, that was originally modal), where the conception of time as a power may have mediated this shift.

Låt

The primary meaning of låt 'let' is as an appeal, i.e. the subordinate wants to suspend the power structure with respect to *p*, like in the following example.

1 < 2		
+	–	Låt mig *p*! Let me *p*!

If it is supposed that the power structure is non-negotiable, *låt* 'let' is rather rarely used. It is used mainly in the expression *låt bli*, marking the negative imperative. The second case in the example below marks a concession. So the core meaning of *låt* is determined by the expectation pattern – +, i.e. that 1 is negative to *p* but believes 2 to be positive.

1 > 2		
–	+	Låt bli *p*! Don't do *p*! Jag låter dig *p*. I let you *p*.

5.2. Three actor modals

Vill, *skall* and *låt* represent the two actor group of modals typically involving only two powers competing, while the rest of the verbs, *kan*, *får*, *måste*, *bör* are mainly used to show an interplay between three powers, the two of the speech act, and another outside.

Kan/får

It seems that the etymological origin of *kan* 'can' is 'know.'[26] Since we view knowledge as a primarily social relation, this use of *kan* thus conforms to our general analysis. The other sense of *kan*, 'be able to,' is derived from the social relation by depersonalizing the situation, and can thus not be modelled by an expectation pattern.

In the cases where *kan* is used positively, it does not normally concern the action *p* directly, but rather some *means* to accomplish *p*. For example, if the one in power orders the subordinate to get her something for her hang-over, the subordinate may say *The drug store is closed*, indicating that he does not know how to obey the order. The one in power can then indicate possibilities by saying for example *You can go to the city, where the pharmacy is open*, or *You can ask the neighbors, they may have something*.

Connected with this is the fact that for the other modal verbs, the *attitude* of the speaker towards the action is determining the modal relation, while for *can* this aspect is often irrelevant.

The pair *kan–får* in some cases parallel the pair *can–may* in English. According to our data, they are mostly used in the negative, like in the next example, where *kan* represents an *unmarked* case, and where *får* bears the mark of subordination in *another* power relation being relevant to the current *p*.[27]

26. This sense of *can* is obsolete in modern English. Both *can* and *know* are derived from the same origin.

27. The root meaning of *får* is asking for permission (derived from *få lov* 'be given permission to'), like in *Får jag gå på cirkus?*, 'May I go to the circus?'

1 < 2, 1 < 3			
+	+	–	Jag kan inte *p*. I can't do *p*.
			Jag får inte *p*. I may not *p*.

Observe that the third column in the three-part relations concerns 1's expectation about 3's attitude.

Since we have assumed that the power structure is established, this part of the analysis does not cover the negotiation cases. An interesting case of negotiation is when 1 has the possibility to affirm her own power, like in *Jag kan visst cykla själv* 'Sure, I can bike myself,' with the typical emphatic *visst* meaning 'truly' or 'surely' and *själv* focusing the first person perspective.

Måste

The core meaning of *måste* 'have to' is that 1 knows that there is an external power overriding both 1 and 2, giving examples like

1 < 2, 1 < 3			
–	–	+	Jag måste *p*. I have to *p*.
1 > 2, 1 < 3			
–	–	+	Du måste *p*. You have to *p*.

Observe that it is the clash between the attitude of the one in power and the third power that produces examples with *måste*, giving the prototypical expectation patterns for *måste* as ( ) – +.[28] In the case where the two expectations are in accordance, so that I know that your attitude is the same as the third power's attitude, I will not say to you that I *have to*.[29]

28. 1's attitude is irrelevant.

29. There is of course always the possibility to treat 'you' as the third power talking more or less to myself, saying *I guess I must do that*.

Bör

The core expectation pattern for *bör* 'should, ought to' is ( )( ) +,[30] in contrast to the ( ) – + for *måste*. *Bör* gives a milder meaning, more of an impersonal request, like in

1 > 2, 1 < 3
+ Du bör *p*.
You should *p*.

Talmy (1988:85) treats the corresponding English *should* by rewriting all sentences containing *should* of the type *E should VP* with *E' holds that E should VP*:

> Whether expressed or not, there is always some entity within *should*'s total reference that holds the implied beliefs and values noted. Usually, this entity is 'I,' the speaker, or alternatively perhaps, some conception of generalized societal authority. [...] But the evaluating entity must be named if it is not 'I/Society,' and *can* be named even if it is [...]

This "entity within *should*'s total reference that holds the implied beliefs and values noted" seems to be an exception in Talmy's system of impersonal forces, but is fully included in our approach as the third power. The nontypical cases where 1 corresponds to this entity, we treat as if the speaker takes the role of an impersonal power.

6. Epistemic modalities

In this section, we will extend our analysis to the epistemic uses of modality. We will argue that they can be given a natural treatment by viewing the *evidence* available in the speech situation as a power in itself.

There is strong agreement among linguists that there has been a diachronic shift of meanings from deontic to epistemic meanings

30. Thus, the attitudes of both 1 and 2 are considered irrelevant. As soon as a negative attitude of the one in power is taken into account, *måste* is used.

in the group of modal auxiliaries.[31] In this article, we have based the semantics of the deontic modals on the power relations between the participants in the speech act situations. In our view, the epistemic modal uses can be seen as an extension of the power relations. Apart from the power relations between the speech act participants, the power of the evidence is *accepted* as an autonomous third part.

For example, by uttering *John must be home now, since the lights are on*, the speaker indicates that the evidence forces him to conclude that John is at home.[32]

6.1. Modality in two worlds

One way of viewing the transition from the deontic to the epistemic use is as a metaphorical shift from the real world, to an epistemic world inhabited by propositions. This is the approach of Sweetser (and Talmy after her). Sweetser (1990) analyses what she calls diachronic metaphorical changes in some semantic fields of English. She writes (pp. 64–5):

> Any sentence can be viewed under two aspects: as a description of a real-world situation or event, and as a self-contained part of our belief system (e.g. a conclusion or a premise). As descriptions, sentences describe real-world events and the causal forces leading up to those events; as *conclusions*, they are themselves understood as being the result of the epistemic forces which cause the train of reasoning leading to a conclusion. Modality is a specification of the force-dynamic environment of a sentence in either of these two worlds.

There are two main disadvantages of viewing the epistemic uses of modals as metaphorical extensions of the deontic uses. Firstly, in the analysis of Sweetser, there is no distinction drawn between the

31. Both Traugott (1989) and Sweetser (1990) attest to this and give further references.

32. The conclusion itself is thus an *epistemic action*.

constative and manipulative speech acts. We want to stress this distinction, which comes out naturally when we place the focus on the precedence of the conceptual structure over the linguistic expressions produced. Secondly, there is no such thing as two worlds – there is only the social world with its different attitudes and expectations.

6.2. Strengthening of conversational implicatures

Another analysis of epistemic modals is provided by Traugott (1989), who has set up three hypotheses about paths of semantic change (pp. 34–35).

> Tendency I: Meanings based in the external described situation > meanings based in the internal (evaluative/perceptual/cognitive) described situation.[33]
>
> Tendency II: Meanings based in the external or internal described situation > meanings based in the textual and metalinguistic situation.
>
> Tendency III: Meanings tend to become increasingly based in the speaker's subjective belief state/attitude toward the proposition.

Traugott views the shift as a gradual pragmatic conventionalization, more than as a sudden shift from one "world" to another. The starting point for linguistic change according to her view seems to be the description of (temporally and spatially) present events. As a consequence, she sees the semantic change as the "conventionalizing of conversational implicatures" (1989:50):

> The process that best accounts for the conventionalizing of implicatures in the development of epistemics is the process of pragmatic strengthening [...] If one says *You must go* meaning 'You are allowed to go' (the Old English sense of **motan*), one can be following (or be inferred to be following) the maxim

33. > = diachronically preceed(s).

> 'say no more than you must,' i.e. the principle of relevance [...]. In other words, from permission one can implicate expectation.[34]

Traugott's tendencies are of a very abstract nature, and it is difficult to relate them to cognitive mechanisms. Our model reduces the diachronic shift to a gradual detachment of the evidence as an independent power. The fact that the epistemic uses of modals are not present at early stages of linguistic development indicates that it is not obvious that a linguistic community must *accept* evidence as an entity that can be ascribed power.[35]

The role of conversational implicatures is to use them together with the utterance to draw conclusions about the attitudes and expectations of the speaker. In other words it is not only the utterance but also the evidence concerning the conversational context and the background knowledge of the hearer that determines the force of the utterance. It is a small step from this perspective on the context to view the *evidence itself* as a power. However small, this step is crucial in the transition from the deontic to the epistemic uses of modal expressions.

The question is whether the shift from viewing the evidence as part of the context to viewing it as an independent power can be seen as a *metaphorical shift*, as Sweetser and Talmy want it. In our

34. A similar phenomenon is mentioned by Traugott in the development of the polysemy of *since*, (p. 34, some emphasis added):

> a polysemy arose in M[iddle] E[nglish] when what was formerly only an inference had to be construed as the actual meaning of the form, as in *Since I am leaving home, my mother is mad at me*. At that stage *since* had become polysemous: in one of its meanings it was temporal and could have an *invited inference of causality*; in the other, it was causal.

35. It seems that in certain illiterate societies, evidence cannot be treated as an abstract object, but must always be tied to personal experience. (Cf. Luria 1976 and Gärdenfors 1994) The development of a written language provides a medium in which evidence can be given an existence that is independent of the language users.

opinion, the shift in meaning is rather determined by a pragmatic strengthening of the role of evidence. This process involves no dramatic shift of *domains* like what is typically the case for metaphors.

However, there is no direct conflict between a metaphorical analysis and one in terms of the power of evidence and conversational implicatures. Traugott (1989:51) writes:

> To think of the rise of epistemic meanings as a case of pragmatic strengthening is not to deny the force of metaphor (nor, indeed, does an explanation based on metaphor deny the force of pragmatic strengthening), because metaphor also increases informativeness and involves certain types of inferences [...]. The main difference is the perspective: the metaphoric process of mapping from one semantic domain onto another is used in the speaker's attempt to increase the information content of an abstract notion; the process of coding pragmatic implicatures is used in the speaker's attempt to regulate communication with others. In other words, metaphoric process largely concerns representation of cognitive categories. Pragmatic strengthening and relevance [...] largely concern strategic negotiation of speaker–hearer interaction and, in that connection, articulation of speaker attitude.

6.3. The power of evidence

Evidence cannot be a speaker or a hearer, so its role is typically that of the third person. In contrast to human agents, evidence, whether common or personal, has no attitudes in itself. The only thing that varies is the strength or weight of the evidence, i.e., the amount of information that "speaks" in favor of a certain conclusion. The weight of evidence is what determines its power.

Another difference between the deontic and epistemic uses of modals is that the objects of deontic modal verbs are actions, while the epistemic modal verbs concern *states of affairs*. For, example in the epistemic use of *He must have blown the safe*, the speaker *reports* that the evidence that is available to her *forces* her to the conclusion that the world is such that he has blown the safe.

In the deontic use, where the objects are actions, the utterances containing modals are *speech acts*. In contrast, in the epistemic use, where the objects are states of affairs, the function of the utterance is to report. Thereby, it does not (directly) deal with the power relations between the speaker and the hearer and the resulting demands.[36] Being a report, an expression containing an epistemic modal is primarily about the *third* person (or the non-person), while deontic modals used in speech acts typically concern the first or second person, as we argued above.

6.4. Some prosodic phenomena

An interesting phenomenon is the deaccentuation of the epistemic modals. This seems to occur both in English and Swedish. Thus, the *must* in *He must be at home* tends to be more strongly accentuated in the deontic sense than in the epistemic.

A general principle is that the accentuated constituents of a sentence signal what is subject to challenge – the prosodic focus corresponds to the focus of the discussion. The deontic senses deal with the manipulation of present states of affairs, while the epistemic uses *report facts* that are not subject to challenge (Givón 1989). Hence, the scope of the epistemic modals is the complete sentence, and the epistemic interpretation of *He must have blown the safe* is thus 'There is strong epistemic evidence for concluding that he has blown the safe.'

Although nobody seems to have studied this prosodic phenomenon for modals, it is in accordance with the principles in Anward & Linell (1976). They claim that the more a linguistic constituent is lexicalized, i.e. treated as one lexical unit, the fewer accents it tends to have.[37] For example, the edible *hot dog* has only one accent, while the pet version on a warm day has two.

36. Of course, a pure observational report can also, by conversational implicature, have strong deontic effects. For example, the report "I noticed that you took the ten pound note from the blind beggar's hat" can, in the right context, have devastating penal consequences.

In an analysis in terms of a mapping between two worlds, like the one proposed by Talmy and Sweetser, there is no support for such prosodic phenomena. As argued above, the linguistic accentuation correlates with the degree of challengeability. So if the pragmatic strengthening advocated for by Traugott involves a gradual lowering of this challengeability, then the phenomenon observed here will support Traugott's version, rather than the metaphoric view of Talmy and Sweetser.

6.5. Graded epistemic modality

There is a rather clear epistemic gradation in the Swedish modals, ranging from possibility to necessity:

Han kan vara hemma nu.	'He can be home now.'
Han bör vara hemma nu.	'He may be home now.'
Han skulle vara hemma nu.	'He should be home now.'
Han lär vara hemma nu.	'He is said to be home now.'
Han skall vara hemma nu.	'He will be home now.'
Han borde vara hemma nu.	'He ought to be home now.'
Han torde vara hemma nu.	'I dare say he is home now.'
Han måste vara hemma nu.	'He must be home now.'

Some of the modals – notably *skall*, *skulle* and *lär* have a clear evidential meaning component. *Låt* and *få*, have no typical epistemic uses, as far as we have noted.

7. Conclusions

We have proposed to view the core meanings of the modal verbs as determined by the power structure of the speech act situation where they are used. We have found that the different participants'

37. This does not, of course, affect the emphatic stress that can be put on almost any constituent in a phrase, like in *He MUST be home now, I DO see the lights on*.

expectations about each other's attitudes combined with the social power structure largely determine the use, and thereby the semantics, of modals.

We have studied the Swedish modals, and to some extent compared them to their English counterparts. Our general semantic approach should, however, be applicable to all languages with modal verbs.

Even though our work has been inspired by Talmy and Traugott, our analysis in terms of power and expectations shows a way to extend and refine their views and brings out the underlying cognitive principles that are required for a unified treatment. In particular, the social function of discourse is better accounted for by focusing on attitudes and expectations about attitudes than by starting from physical forces.

Furthermore, we don't accept Talmy and Sweetser's analysis of the epistemic modals as a metaphorical shift from the deontics. In contrast, we propose that the epistemic modals arise by viewing evidence as an independent power. This is probably connected with the dissemination of literacy, since the material character of the written word on paper has presumably promoted the acceptance of evidence as a power in its own right.[38]

We believe that our semantic apparatus can be applied to linguistic and cognitive phenomena other than modals. For example, we claim that in expressions like *a suspected escape car* and *an alleged thief*, the adjectives show the same epistemic power structure as the modals do. Furthermore, in conditionals like *There are cookies in the box, if you want some*, the *if*-clause seems unnecessary since the cookies are there even if you don't want them. We believe that by taking expectations into account, in particular politeness conditions, such examples can be handled using our approach.

38. We owe this point to Peter Harder.

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