

Semantic substance vs. contrast in the development  
of grammatical meaning

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Studies of grammaticization over the years have emphasized the following observation: (i) Lexical material can develop into grammatical material, which implies that lexical meaning gradually evolves into grammatical meaning.<sup>\*</sup> More recent cross-linguistic studies have added to this a second observation: (ii) very similar paths of development of lexical meaning into grammatical meaning may be identified in different languages, or in the same language at different periods (e.g. Givón 1975, Heine and Reh 1984, Bybee and Pagliuca 1985, 1987, and others). Elaborating the second point, similarities may be found both in the lexical sources for grammatical morphemes and in the grammatical meanings that eventually develop. These cross-linguistic similarities in paths of development are similarities in semantic substance, and not attributable solely to structural or typological similarities or to common mechanisms of change.

In this paper, I would like to examine the implications of these two observations for our understanding of grammatical meaning as a general cognitive or psychological phenomenon.

1. Grammatical meaning as opposition.

First, let us consider what has been the received view of grammatical meaning for most of this century (that is, for those who have considered it worth studying at all) -- the structuralist view that grammatical morphemes (to be called 'grams' in this paper) are assigned a value by the oppositions that they enter into. This view is espoused by Jakobson 1957, Diver 1964, Kirsner 1969, Waugh 1975 and Reid 1988, to name but a few. In this view, a gram does not have an inherent meaning of its own, but rather has its value defined as a member of a set of mutually exclusive grams.

This opposition hypothesis of grammatical meaning is largely incompatible with the two facts about grammaticization mentioned above. First, if lexical content becomes grammatical content, then it follows that grams have inherent semantic content of their own, not just content assigned to them by the system or the grams they contrast with. Second, since there is a consistent relationship between lexical and grammatical meaning across languages and across time, grammatical meaning is determined more by its diachronic source than by the other grams in the language, since these may be very different from language to language.

Take as an example Diver's (1964) analysis of the Latin Nominative, Accusative and Dative cases, which form in his words 'the system of agency' of the Latin noun. In his analysis, the Nominative case is the marker of the Agent (the performer of the

action), the Accusative indicates the Patient (that which undergoes the action), and the Dative is the 'residual' member, indicating Non-Agent-Non-Patient. The meaning of the Dative, then, is defined by what it does not express; it has meaning only because it contrasts with the Nominative and Accusative. According to Diver, the more particular relations expressed by the Dative are "deduced from the complex of lexical and syntactic meanings present" (1964:181). This accounts for the wide range of relations signalled by the Dative case. This analysis is not, by the way, supported by the formal marking of the cases, since if any one of them is 'unmarked' it is the Nominative, and certainly not the Dative.

From the point of view of grammaticization theory, it is ironic that Diver chose the Dative as the 'residual' member of the agency system, since the dative case is usually the least grammaticized member of this trio. That is, the dative is likely to have retained more of its lexical meaning than the nominative or accusative; it is more likely to be expressed as an oblique in contrast to the more grammaticized core relations, and it is the least likely to have zero expression.

Numerous examples show a diachronic relation between the dative case and a directional adposition meaning 'towards', and many languages use the same marker for allative as for dative. For instance, in a forthcoming study by Svorou of locative adpositions in 26 languages, she finds eleven languages where the allative marker is also used to mark the recipient or dative. Even though the dative might convey different meanings in different contexts, the particular meanings covered by the dative are cross-linguistically predictable. These cross-linguistic relations would be unexplainable if the dative and other cases were semantically empty and have value only within a system of contrasts.

## 2. Against the notion of maximal contrast.

In the structuralist ideal, the system is reputed to have a certain economy. Like vowels spread out on the periphery of the vowel space, it is believed that grams should be distributed to make maximum contrasts and that the job of the linguist is to discover the dimensions along which these maximum contrasts are made. Even if we reject the idea that grams are imbued with meaning by the system of oppositions, it seems that most linguists still accept the idea that the essence of meaning (especially grammatical meaning) is to be found in the semantic contrasts available in the system. While I agree that contrast does play some role in communication, I would like to argue that the understanding of grammatical meaning does not rest entirely or even primarily on the identification of possible contrasts. A similar argument can be made in phonology: distinctive features were originally designed to express phonemic oppositions or capture contrasts. However, they often fail to offer good descriptions or explanations of the behavior of sounds in context

or across time, precisely because they concentrate only on the contrasting properties of sounds. (E.g. Vennemann's 1972 argument that a purely redundant articulatory feature of certain consonants -- that the back of the tongue is low (i.e. for dentals) has a lowering effect on preceding vowels.)

If grams made maximal use of the conceptual space in order to express contrast, then we would not expect grams in the same contrast set to ever be interchangeable or to overlap in meaning. On the other hand, if grammatical meaning is inherent to a gram, deriving from the lexical source of the gram, and if grams develop independently of one another, then we might expect overlaps in meaning, with fine or subtle distinctions between grams in some cases rather than maximal contrasts. This would occur particularly in cases where a younger gram is developing a meaning similar to that expressed by an older gram.

Examples of such a situation are found in present day Dutch and German, where the compound Perfect (formed with an auxiliary plus a Past Participle) is used in many cases interchangeably with the older simple Past. Differences of meaning or implication can be found in certain cases (for example in Dutch [de Vuyst 1985]), but these contrasts do not define the primary content of the grams in question. Another example is the difference between the Simple Present and the Progressive in English. In many cases, this distinction is quite clearly an aspectual one of habitual or generic vs. progressive, but in other cases the contrast in minimal pairs of sentences is quite subtle and not classifiable as an aspectual difference.

Hatcher's (1952) analysis of the Progressive is interesting in this regard. She concentrates on the most difficult cases, the ones in which both the Present and the Progressive can be used in reference to 'a single present occurrence'. That is, she is not concerned with the Simple Present as habitual, but rather as it represents an ongoing situation, as in (1). Her goal is to discover the meaning of the Present Progressive as it differs from the Simple Present, but she does not approach this, as so many others do, by examining pairs of sentences that differ only in this grammatical distinction. Rather she begins by examining the linguistic contexts and more particularly the verbs with which the Simple Present would be 'normal', as in (1a), which she characterizes as displaying no overt activity, or in (1b), which are performative contexts, in which "the activity predicated has no existence apart from the predication, but is identical to it" (p. 267).

- (1a) It stings. It tickles. It smarts. My new shoes hurt me.  
 This bores me. This worries me.  
 My back aches. My nose itches.  
 I smell something funny. I see it. I hear it.  
 I remember her. Yes, I understand. I love your hat!
- (1b) I insist that she will come. I tell you I won't.

I give my consent. I refuse. I deny it. I bet five dollars.

She then turns to contexts in which the Progressive would be 'normal', as in (2a), which she characterizes as describing overt activities, and (2b), which are non-overt, but indicate development by degrees.

(2a) She is washing dishes, sweeping the floor, tending the furnace.  
I'm slipping. I'm losing hold.  
It's falling to pieces. It's boiling over. It's spilling.  
Your teeth are chattering. Your nose is running.

(2b) I'm getting hot. One of my headaches is coming on.  
He is learning his lesson.  
It is becoming, getting, growing late.  
This is driving me nuts, getting us nowhere.

She concludes that the 'normal' use of the Progressive is for overt activities or states developing by degrees. She further notes that all of these cases contain one of the following three ideas or psychological nuances (p. 271):

- (3) (i) the subject is affected by his activity,  
(ii) the subject is busy or engrossed in his activity,  
(iii) the subject is accomplishing something by his activity.

Thus if the Progressive is used in a context where it is not 'normal', that is, for a non-overt and non-developing activity, then its effect is to convey the involvement of the subject in one of the ways listed in (3). Consider the contrasting examples in (4).

- |                             |  |
|-----------------------------|--|
| (4) Yes, I see the picture. | Imagine: at last I'm seeing the Mona Lisa.           |
| I consider that unfair.     | I'm considering the matter carefully.                |
| I wonder if it will rain.   | I'm wondering just what is the right way to do this. |
| Stop, you make me nervous.  | Don't you see you're only making her nervous?        |

Hatcher's analysis is quite consistent with grammaticization theory and the known history of the development of the Progressive. Since the Simple Present originally was a present tense, which included contexts now covered by the Progressive, she explicitly argues that it expresses no aspectual meaning at all. In her view, "only the progressive has a positive and unified emphasis; the simple form is essentially neutral in its aspectual implications and therefore may have, or may seem to

have, different emphases according to the particular type of predication in which it appears" (p. 259).

Hatcher's analysis is compatible with grammaticization theory in other ways as well: the meaning that she proposes for the Progressive may be argued to follow directly from the compositional meaning of its source construction. Unfortunately, the historical source of the modern Progressive is not unequivocally decidable from the available evidence, but one likely source involves the copula plus a locative adposition and the -ing form of the verb ('He is on hunting').<sup>1</sup> A locative source for progressive, which is the most common cross-linguistically, would yield an original meaning of "the subject is located in or at an activity". The sense of location in an activity is retained in the feeling that the subject is especially involved in the activity, and in the fact that the Progressive is the 'normal' way to describe present occurrences of overt activities -- activities whose location is overt.

Note further that cases where the distinction between the meaning of the Simple Present and Progressive is subtle are also predicted by grammaticization theory. Thus where the Progressive has extended to take non-animate subjects much of its original sense is lost. Hatcher notes the examples in (5).

- |     |                                     |   |
|-----|-------------------------------------|---|
| (5) | Your slip shows.<br>My nose itches. | Your slip is showing.<br>My nose is bothering me. |
|-----|-------------------------------------|---|

It is interesting to compare Hatcher's approach to a more recent but more typically structuralist one, that of Goldsmith and Woisetschlaeger 1982, who are also searching for the meaning of the English Progressive in the same types of cases that Hatcher examines. They proceed by examining minimal pairs of sentences contrasting the Progressive with the Present. They propose that the Progressive describes "what things happen in the world" (a phenomenal description), while the Present describes "how the world is made that such things may happen in it" (a structural description) (p. 80). It's not my goal to take issue with this characterization. On one interpretation it could be said to be compatible with Hatcher's analysis. What is of interest here is the view that the authors take of the distinction they propose. They say:

In fact, it is the fairly abstract nature of this particular semantic distinction that makes it of interest to us, for if the analysis proposed here is correct, then we have learned something directly about the conceptual distinctions a speaker of English uses in every sentence uttered. (p. 79)

This passage emphasizes contrast, or the distinction made between the two grammatical forms, while Hatcher emphasizes the contribution made by the positive or non-zero form. Note that Goldsmith and Woisetschlaeger have given a 'meaning' to both the

Simple Present and the Progressive. The meaning they assign to the Simple Present, however, is in a sense a default meaning, since it signals 'the way the world is'. (Cf. Gerhardt and Savasir 1986 for a similar analysis of the use of the Simple Present in child language.)

One implication of this theoretical difference can be seen in Goldsmith and Woisetschlaeger's comments about the Progressive in another language, Spanish. Spanish Progressives do not have quite the same distribution as English Progressives<sup>2</sup>, but they seem to assume that the Present and Progressive in Spanish are expressing the same contrast as in English, and thus ask "Which exhibits the unmarked state, then, English or Spanish?" (p. 88).

Their view seems to be that this 'metaphysical' distinction expressed by the English Present vs. Progressive is so basic and important that it "should be embedded within a more general theory of semantic contrasts which predicts which semantic domains a language may choose to incorporate under a single syntactic umbrella." (p. 89). This theory presumably also predicts that there is an unmarked way to express particular contrasts, but that some languages show deviations from it.

It is certainly true that we as speakers learn and know these grammatical meanings and use them (some of us more artfully than others) but that does not necessarily mean that each contrast represents a major cognitive distinction, for if it did, it would be very difficult to explain why one of these grams can take over the functions of the other, effectively obliterating what is claimed to be a very important conceptual distinction. For this reason, it seems preferable to view grammatical meaning as substance, and to concentrate our studies on the content of a gram, rather than focussing on the contrasts or distinctions that speakers supposedly have to make. Thus from a diachronic perspective, we would have to view the difference between the English and the Spanish Progressive as one of degree of development. The two constructions arise from very similar sources (the Spanish auxiliary estar is the verb used for location, earlier meaning 'to stand' in Latin), but the Spanish one has not extended its domain as much as the English one has. Whatever contrasts each of these Progressives is making at the moment is a function of how far their grammatical meaning has developed.

### 3. The role of contrast in grammaticization.

I have been arguing that the notion of opposition or contrast is given too much weight in structuralist thinking. It is important to look at the real empirical evidence for the role of contrast, so that it may be put into perspective.

First, it is true that when we use one form we are not using the other and this is a choice that speakers are free to make. However, it's more likely that this choice is made for the positive content the form expresses rather than for what it does not express. Note further that contrasts are not always

available; certain grams 'go' with certain lexical items. Thus if I say "Mary knows my address" it is hardly because I chose not to say "Mary is knowing my address".

Second, there is a way in which we may consider the meaning of one gram to affect the meaning of another. A developing gram surely must constrict the domain of application of existing grams of similar meaning, for every time it is used another gram is not. This raises the very interesting question of whether or not the development of one gram may imbue another gram with meaning. In most cases, it appears that this does not occur. For instance, as will develops as a marker of prediction, it takes over many of the environments in which shall expressed prediction, in particular, all except those with first person subjects. The result for British English is that shall expresses obligation in formal styles in all persons, but expresses prediction only in first person. However, no new meaning is accrued in the process; all the meanings that shall has now it had before will developed, only now its usage is curtailed. That is, only the source meaning and meanings derivable from it continue to be operative, and some of these may be lost if taken over by another form.

The cases in which a new gram contrasts with zero, however, are more interesting and more problematic. The English Progressive vs. Simple Present is such a case. Clearly a Simple Present has a different meaning now than it did in Old English. In Old English, a sentence such as "The bird flies" could be interpreted as a present occurrence in progress, as an habitual, as a generic statement or even as a future. Its present-day interpretation is much more restricted than this; with certain verbs (such as 'fly') only the habitual or generic interpretations are possible. We cannot say, however, that the development of the Progressive has imbued the Present with habitual or generic meaning, since that meaning was always possible. Nor can we say that the Present is lacking in meaning, since it does exclude certain interpretations, namely just those that the Progressive (or Future) express. But it is certainly worth noting that the particular meaning that the Present conveys is a default meaning in the sense that it is derived from the speakers' knowledge of the world together with the linguistic context. Note that this description of the way that the meaning of zeroes arises predicts that zeroes will have just the sort of default meaning that they do. The zero expression of the singular of nouns comes about through the development of a plural marker where plurality needs to be explicitly expressed. This imbues the zero with singular meaning only because most nouns are commonly conceptualized and referred to in the singular, so that no mark for plural implies the default, or singular case.

A new locution develops because people want to say something over and above what the default case signals (García 1987), not because they want to express a new contrast. The examples in (6), which might be paraphrases of the meaning of the progressive in early stages of development, are intended to

illustrate this point.

- (6) She is busy reading.  
He is engrossed in gardening.  
They are in the process of building a table.

These expressions are rich in content: they describe a volitional agent involved in an activity. But these expressions do not contrast with the Simple Present, they say something in addition to what the Simple Present says. In fact, they are expressed in the Simple Present. It is only as the Progressive locution grows in frequency that it becomes the normal way of talking about certain ongoing activities. The Simple Present, however, remains the normal way of talking about habitual and generic acts and states. A contrast develops as a byproduct of the grammaticization of the Progressive, but even so, the Progressive is encoding an explicit meaning, not just signalling a contrast.

#### 4. One meaning or two?

One goal of the approach to grammatical meaning that I have been criticizing (i.e. the structuralist tradition of Jakobson 1957, Diver 1964, etc.) is to find a single meaning for each grammatical morpheme. Waugh 1975 calls this the principle of Formal Determinism and following Jakobson, says

it is assumed that differences of forms (sic) exist to differentiate meaning categories while identity of form (normally) implies identity of meaning. (p. 438)

The second part of this statement (that identity of form implies identity of meaning) is not in principle incompatible with the idea that grammatical morphemes have semantic substance. In fact, if the meaning of a gram continues its previous lexical meaning, it could very well have a single meaning for all of its uses. On the other hand, the principle cannot be rigidly adhered to for in the later stages of grammaticization, the distribution and meaning of grams may grow complex. I will argue in the following that this complexity arises from the interaction of the semantic substance of a gram with its contexts of use, as well as from the interaction of one gram with other developing grams.

First, let us consider two examples of cases in which a single sense is sufficient to explain all of the uses of a gram, beginning with the case of be going to in English. Coates 1983 analyzes be going to as having two meanings, a root meaning of 'intention' and an epistemic meaning of 'prediction'. She draws the following examples from her corpus (p. 198):

- (7a) Intention: I'm going to draw this ... so that he can have a full picture.  
(7b) Prediction: We're going to have a new mum. Our dad says we're going to have a new mummy.



While there is no denying that these utterances express intention and prediction respectively, it does not follow that these are the two meanings of be going to or that be going to is polysemous. It is possible to propose a sense of be going to that makes it appropriate to both of these uses -- the statement of intention and the statement of prediction. This sense is very close to the original meaning of the construction. If we propose (as in Bybee and Pagliuca 1987) that be going to means that the subject is 'on a path moving towards a goal' and allow that the 'path', 'movement' and 'goal' need not be physical or spatial, then all of the uses can be explained. The apparent polysemy is due to the context. With a first person subject, the speaker is stating that s/he is 'on a path moving towards a goal', and this may be a statement of intention if the situation is something the speaker has control over (as in (7a)). The resolve implicit in statements of intention is signalled by the Progressive aspect of be going to which indicates that the subject is already on the path.

If the subject has no control over the situation, and if the speaker states that the subject is on a path moving towards a goal, it means that the speaker is predicting the outcome situation (as in (7b)). The comparison of be going to with will shows that be going to implies that there are already present indications the prediction will come true (Wekker 1976). Again, this is explained by the fact that be going to signals that the subject is already on the path towards the goal.

A similar analysis is possible for can which is sometimes thought to have three meanings in Modern English -- ability, permission and root possibility (again see Coates 1983). Can earlier meant 'know', and with a verbal complement, 'know how to'. It has undergone a steady generalization of meaning over the last eight hundred years, which can be schematized as in (8), which shows that generalization corresponds to the loss of specific components of its meaning:

- (8) The sense of can goes through the following stages:
- (i) mental enabling conditions exist in the agent
  - (ii) enabling conditions exist in the agent
  - (iii) enabling conditions exist
- for the completion of the main predicate situation

First, the enabling conditions reside entirely in the mental capacity of the agent (as in (i)), but since most activities involve both a mental and physical component, can later includes the physical capacities of the agent, and the sense is as in (ii), where the restriction that the capacities be mental is lost. The ability of an agent to perform or complete a certain predication does not in many cases reside entirely in the agent, for often external conditions enable or disable the agent. Thus in (9) the nature of the enabling conditions depends to a large extent on

the properties of the horse and the sonata.

- (9) I can ride that horse.  
I can play that sonata.

So in the third stage, can includes all types of enabling conditions, and displays the sense that is usually labeled 'root possibility'.

Thus modern can has a variety of interpretations depending on the context.

- (10) mental ability: I can read German.  
physical ability: I can swim a mile.  
root possibility: This word can be used in many contexts.  
permission: I can take books out for two weeks.  
I can vote in the Democratic Primary.

Note that 'permission', which is regarded as a root sense since permission is deontic, is a contextual interpretation of the more general root possibility sense. The evidence for this is that the permission use of can developed only after the root possibility sense developed. One use of can is in asking and granting permission, as in (11), but this is a use and does not mean that 'permission' is a specific sense of can.

- (11) Mommy, can I have a cookie?  
You can come in now.

Attempts to reduce the uses of a gram to one basic meaning can, however, be carried too far. Such is the case when, in an attempt to put all the uses of a gram under a single umbrella, the postulated sense must become so general and abstract that it cannot contain the specific components of meaning that are available in certain contexts. A good example of this problem is the 'remoteness' analysis of the past tense in languages which use their Past Tense form in hypothetical or counterfactual if-clauses. It has been suggested by Steele 1975 and Langacker 1978 that the meaning of Past Tense in languages such as English, in which Past is used in hypothetical protases, is something like 'remote from present reality' rather than 'preceding the moment of speech'. While this proposal certainly takes care of the if-clauses, it leaves a problem for the more normal use of the Past Tense, because it cannot explain why in main clauses with no counter-indications in the context, the default reading of Past Tense marking is the more specific one of 'preceding the moment of speech'. In this case, then, a single abstract meaning is not sufficient, unless it could be shown that certain components of the 'past' sense are neutralized in the context of conditional sentences.

## 5. Complex sense structures.

It is important to both synchronic and diachronic theory to understand what types of relations among senses are possible, and ultimately how they arise. In this final section, I will consider the development of English may to illustrate the effect of use on meaning, as well as the effect of a developing gram on existing ones.

May earlier signalled ability in the sense of physical strength or might, and it gradually generalized to root possibility, including permission, by the early Middle English period. Its development was quite comparable with the development of can, as it went through the stages shown in (12).

- (12) The sense of may goes through the following stages:
- (i) physical enabling conditions exist in the agent
  - (ii) enabling conditions exist in the agent
  - (iii) enabling conditions exist
- for the completion of the main predicate situation

By the beginning of the Middle English period, may had achieved stage (iii), and was roughly comparable to Modern English can; that is, it signalled root possibility. The next development for may, however, goes beyond Modern can: it is the development of an epistemic sense, as shown in the examples in (13) from Coates 1983:132-3.

- (13) I may be a few minutes late, but I don't know.  
 She's not of the most helpful variety. I don't know. You may hit it off.  
 I may have put them down on the table. They're not in the door.

The difference between root and epistemic possibility may be seen by attempting to substitute can in these examples. May is still sometimes used for root possibility, typically only in writing, as in the following examples (where can would be an appropriate substitute):

- (14) I am afraid this is the bank's final word. I tell you this so that you may make arrangements elsewhere if you are able to. (Coates 1983:132)  
 The difference between root and epistemic possibility may be seen by attempting to substitute 'can' in these examples.

The epistemic sense of may is characterizable as in (15):

- (15) enabling conditions exist for the truth of the whole proposition

We are still dealing with the sense of 'enabling conditions' but their domain of application has shifted to a different level. Rather than applying inside the proposition affecting the relation between subject and predicate, they now apply to the whole proposition. Such a change, then, is not a simple generalization of meaning, as the changes in (12) appear to be. In the following I will argue that generalization is involved, but in addition we must recognize another mechanism of semantic change.

One mechanism of change from agent-oriented modality to epistemic, as pointed out in Traugott 1987, is inference or conversational implicature. The meaning of an utterance is taken to be not just what the utterance literally asserts, but also what is pragmatically implied by it. For instance, in some cases, a sentence with a modal of root possibility implies the epistemic. In a context in which I am estimating my arrival time, (16) implies (17):

(16) It can take me up to four hours to get there.

(17) It may take me up to four hours to get there.

We can also find many examples in older forms of English in which the use of may in its root sense implies the epistemic sense. Consider (18) from Sir Gawain and the Green Knight (l. 1209).<sup>3</sup>

(18) '3e ar a sleper ynsly3e, that mon may slyde hider;'

'You are so unwary a sleeper that someone can sneak in here;'

I have translated may with modern can to convey the root possibility reading. Note that, as shown in (19), the root possibility reading implies the epistemic reading of the sentence, so that it could be argued that (18) can have either sense.

(19) 'someone can sneak in here' implies

'someone may sneak in here'

In (20), the first use of may may be either root or epistemic (and thus may be translated into current English as either can or may), but the second occurrence, with the negative, is only root, and can only take can in present day English.

(20) For mon may hyden his harmes, bot vnhap ne may hit.

(l. 2511)

For a man may/can hide his misfortunes,

but he cannot undo them.

Again, the first clause shows the implication (21).

(21) 'a man can hide his misfortunes' implies

'a man may hide his misfortunes'

About one-third of the examples of may in Gawain can be

interpreted as either root or epistemic possibility; the rest are unambiguously root, like the negative clause above, and (22).

- (22) Make we mery quyl we may and mynne vpon joye, (line 1681)  
 Let us make merry while we can, and think of joyful things,  
 For the lur may mon lach when-so mon lykez. (line 1682)  
 For a man can take sorrow whenever he likes.

The examples of root possibility include some indicating permission:

- (23) 3e may lach quen yow lyst... (line 1502)  
 You may take (a kiss) when you please...

And some indicating ability:

- (24) A! mon, how may thou slepe, this morning is so clere?  
 (line 1746)  
 Oh, how can you sleep, the morning is so bright?

In addition, there is at least one example of epistemic possibility, where a root reading is not possible:

- (25) Hit may be such (that) hit is the better,  
 and 3e me breue wolde  
 Where 3e wan this ilk wele bi wytte of yorseluen.  
 (line 1393-4)  
 It might be better if you would tell me  
 Where you won such wealth by your own wits.

This means that in Middle English, may spans the semantic range that includes all of root possibility, and in addition epistemic possibility. There are contexts in which only the root reading is intended, and a few contexts (even at this stage) where only the epistemic reading is possible, but there are more in which both readings are possible, and in fact, the root reading implies the epistemic one. In order to understand how the epistemic reading becomes prominent, we must suppose that the hearer takes may to 'mean' what it implies; that is, the practical consequences of the utterance take precedence over the literal meaning.

The type of change involved in the grammaticization of an implication appears to be quite different from the type of change involved in what I have referred to as generalization, since it accomplishes a change in scope for the modal from verb phrase scope to propositional scope. However, it should be noted that even here generalization is necessary, and the scope change may be gradual rather than abrupt.<sup>4</sup> An examination of more texts is necessary to fully explicate the mechanism operative in a change by implication, but in the Gawain text the sentences in which the root meaning implies the epistemic one give us some evidence for

the gradual expansion of modal scope. First, recall that the early ability sense of may predicates internal enabling conditions on an animate agent and relates that agent to a predicate. In the later root possibility sense, not only are the enabling conditions from any source but also they are not conditions just on the agent but rather on the whole situation. Thus in the Gawain text, of the nine clear cases in which a root sense implies an epistemic one, four have the pronoun mon 'one' or 'someone' as a subject (see example (18)), so that may signals that the general situation is possible, rather than that enabling conditions exist for a particular agent. Five of the examples (including some that have mon) are in relative clauses with non-specific heads, translatable as 'wherever', 'whoever', and so on, as in (26):

- (26) I hope that may him here  
Schal lerne of luf-talkyng. (ll. 926-7)  
I think that whoever may hear him  
Will learn of courtly love-talking.

These examples also set up a general situation as possible, rather than predicating conditions on an agent.

Even the examples with first person subjects are not really agentive: one is a passive (27), while the others involve non-agentive verbs, such as lerne 'learn', mynne 'remember, be reminded of' and last 'live'.

- (27) that thou schal seche me thiself, where-so thou hopes  
I may be funde vpon folde... (ll. 395-6)  
(give me your word)  
that you will seek me yourself, wherever you think  
I can/may be found on the earth...

- (28) Gif me sumquat of thy gifte, thi gloue if hit were,  
That I may mynne on the, mon, my mournyng to lassen.  
(ll. 1799-1800)  
Give me something as a gift, your glove perhaps,  
That I can/may be reminded of you, man, to ease my mourning.

It appears, then, that the root sense has narrower scope when it signals ability or permission, but has a more general scope in precisely these cases where an epistemic reading may be inferred. I would claim, then, that the development of the root possibility meaning is a prerequisite for the development of epistemic meaning from a verb meaning 'able'.

As may becomes predominately associated with the epistemic use problems arise for the root sense, because there are examples in which the root and epistemic readings have different consequences. For instance, as may is still used in writing in the root sense, the epistemic interpretation is not always appropriate as in (29).

(29) Modality may be divided into three types.

If I write (29), I certainly do not mean that modality may or may not be divided into three types, but I am not sure. I am instead proposing that it is likely correct to divided modality into three types. In cases such as these, can has come to be used to ensure the root possibility reading. Thus can increases greatly in frequency between Middle English and Modern English, coming to serve precisely the role of signalling root possibility. It is only very recently, however, that can has come to be used for permission; may still occurs in this one root use. The result is that may in current (British) usage is predominately epistemic, with some permission examples remaining, as shown in (30) from Coates 1983:132.

(30) Text count of the uses of may in British English.

epistemic	root	permission	indeterminate	other	total
147	7	32	13	1	200

In a sense, the meaning of may has been shattered -- permission has been knocked off from 'possibility' by the intrusion of can, creating a gap between the previously related root and epistemic senses.

In the process of grammaticization, then, the lexical meaning of a morpheme or construction serves as the basis for its semantic substance. This substance is gradually eroded in the sense that specific properties of meaning are lost as the gram is put to a wider and wider range of uses. I would argue that it is the use of grams -- that is, the force or effect of the gram or what it accomplishes -- that influences its changes in meaning. In the case of may, we see two examples of use affecting meaning: in the development of epistemic uses, the practical consequence of a gram's meaning is taken to be its meaning; in the case of the permission use, the pragmatic force of the gram in context is taken to be its meaning.

Finally, let me use the example of can and may to return to the issue of contrast. Certainly can and may contrast, but just as the Progressive and Present contrast as a result of the Progressive cutting its territory out of the Present's domain, can has replaced may in certain uses. As a further consequence can and may overlap in meaning also, in some written contexts. While one might argue that the root vs. epistemic contrast is of some importance (since there are clear cases where the speaker wants to convey the root meaning and not the epistemic one), still we can reasonably predict that can will develop epistemic meaning just as may has, suggesting again that it is not contrast that is the essence of grammatical meaning, but rather the inherent semantic content and what it implies.

The literature on grammatical meaning conveys the impression that if contrast sets are small (consisting of two or

three members), then the contrasts must be large, boldly written, basic, and representative of a world view of the speakers. At one level this is true, but ironically this is the same level at which we find universals, common gram-types that occur cross-linguistically, such as progressive, perfective, or dative (see Bybee 1985, Dahl 1985, Bybee and Dahl 1988). This is the level at which fine distinctions among grams within a language can be ignored and broad patterns across languages observed. But grammatical meaning also involves a certain richness of detail, especially as it combines with lexical meaning and world knowledge, and this can only be understood by considering that grams encode a meaning that is at once abstract and general, but in addition contains traces of its former lexical meaning and thus can convey a richness of nuance and implication that leads to much variety in interpretation.

#### NOTES

\* Many of the ideas put forth in this paper grew out of seminar and private discussions with various colleagues and students at SUNY at Buffalo. I am particularly indebted to Julie Gerhardt, William Pagliuca and Nancy Woodworth. This work was completed while the author had a fellowship from the John Simon Guggenheim Memorial Foundation.

1. The other possible source of the modern Progressive would be a construction found in Old English of the verb 'to be' with the Present Participle. However, there is some question about the continuity of this older construction with the modern Progressive. Curme 1913 shows that the use of the be plus Present Participle in Old English had adjectival or stative force, rather than the active force found in the modern Progressive.

2. The difference is much greater than implied by Goldsmith & Woisetschlaeger's discussion, which focusses on the English use of the Progressive for future, where Spanish uses the Present.

3. All the Middle English examples cited are from Sir Gawain and the Green Knight.

4. I am grateful to William Pagliuca for pointing this out to me.

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