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## Patterns of Semantic Harmonization in English: The Case of *May Well*<sup>1</sup>

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### 0. Introduction

The diachronic semantic-pragmatic process whereby meanings have been based in the speaker's subjective belief towards what is said, i.e. subjectification, has received considerable attention in recent years (Traugott 1989; Langacker 1990; Stein and Wright 1995; inter alia). The development of epistemic modality has been a prime target. Subsequent research has focused on either general or cross-linguistic properties or evolution of modal meanings (Bybee et al. 1994). Recently, one approach appears to gain prominence in studies of language change. It is statistical studies that can be a valuable tool in providing relatively firm evidence for language change. This approach is not new but rather a revival of an older notion of 'frequency' to give an account of the evolution of language (see Martinet 1964: ch.6). Reasonable though this approach seems to be, most preceding studies in grammaticalization and language change in general have been theory-oriented with no reliable amount of examples, just providing general pathways of change. It is true that there emerge a subset of works building on the notion of frequency, synchronically or diachronically, such as Bybee (2001) and Krug (2000). But, it is still necessary to more develop statistical parameters common among many languages for better understanding degrees of morpho-syntactic and semantic changes. Hopper and Traugott (1993: 112) argue under that "[T]here is an urgent need for additional reliable statistical studies of a variety of phenomena in which early grammaticalization appears to be involved". Frequency or quantitative approaches to language change are time-consuming but inevitable to reinterpret language change in a down-to-earth way.

Based on a text-based quantitative approach, I will illustrate the development of epistemic meanings in the modal verb-adverb construction in the history of English,

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with special focus on *may well*. The arguments from this study are that: 1) only semantically cohesive co-occurrences have been selected and conventionalized over history, i.e. semantic harmonization (to be explained in section 1); 2) *may well* is one of the general phenomena of semantic harmonization, and; 3) *may well* is an idiomatic expression of the modal verb-adverb construction. While most preceding research has uncovered the semantic expansion of modals themselves, I assume that a frequency-based constructional approach is a useful device for better understanding language change.

### 1. Theoretical Implications

There are several research projects that focus more or less on the modal verb-adverb co-occurrence in several languages from a synchronic perspective (for English see Jakobson 1964; 1975; Lyons 1977; Hoye 1997; for French see Guimier 1996) and from a diachronic perspective (Jakobson 1981; Shibasaki 1998; Traugott and Dasher 2001: 3.4.1; all about English). For example, Lyons (1977) discusses the semantic cohesiveness between modal verbs and adverbs. He concludes that they normally reinforce each other in meaning in a modally harmonic way. Let us consider the following pairs (*ibid.*: 807-8).

- (1)     a. He may possibly have forgotten.  
           b. He may certainly have forgotten.

In (1a), the semantic relation between the modal verb and the adverb is within the same scope of likelihood; therefore, they can make a single modality that is incorporated in the clause. In (1b), however, the modal verb *may* cannot be fused semantically or pragmatically with the adverb *certainly*, because each lexical item resides in the different level of likelihood; therefore, the interpretation is ambiguous. The important thing is how much epistemic scales of a modal verb and an adverb can be coalesced into the same scope of modality. If a modal verb and an adverb are semantically within the same scope of likelihood, they tend to co-occur harmonized in meaning. I call this phenomenon semantic harmonization.

Hoye (1997: 240) sets forth scales of likelihood based on his corpus-based analysis, which are illustrated in Table 1 (with slight modification). One of his important arguments is that “the unmodified modal conveys possibility, whereas the combination designates probability” (*ibid.*: 234; also see 241); in other words, when a modal verb co-occurs with an adverb, the scale of likelihood becomes higher. It is also suggested that not all combinations of modal verbs and adverbs are possible judging from his corpus-based analysis, but a modal verb and an adverb from the same or closer scale of likelihood have a strong tendency to co-occur. This finding gives support for Lyons’ comments on (1) and our view of semantic harmonization.

*May well* has been considered as being the most problematic collocation; however, most researchers seem to have reached a consensus that *may well* is an idiomatic expressions. Hoye (1997: 235) assumes that “MAY WELL appears to be

a modal idiom, on a par with other verbal constructions like HAD BETTER or WOULD RATHER which are widely accorded the status” (see also Palmer 1995: 210). Furthermore, *may well* shows some rigid constructional aspects, as Hoyo (1997: 234) argues that “MAY WELL is invariable and resistant to any form of modification; paradigmatic substitution of other adverbs, while possible, disrupt the integrity of the meaning this particular collocation conveys”. The following analysis gives support for the view that *may well* is an idiomatic expression of the modal verb-adverb construction in terms of semantic harmonization and frequency.

**Table 1: Epistemic modal and modal adverb classification (Hoyo 1997: 240)**

A	B	C
<i>Possibility</i>	<i>Probability</i>	<i>Certainty</i>
MIGHT	SHOULD	MUST
MAY	OUGHT TO	CAN'T
COULD	WOULD	
CAN	WILL	
POSSIBLY	PROBABLY	CERTAINLY
CONCEIVABLY	QUITE LIKELY	DEFINITELY
PERHAPS	MOST LIKELY	INDEED
MAYBE	WELL	PRESUMABLY
		SURELY
		FOR CERTAIN
		OF COURSE
		UNDOUBTEDLY
		NECESSARILY

## 2. Data

As is often pointed out, expressions scribed in Middle English texts are considered to reflect colloquial expressions of those times. For example, Burrow and Turville-Petre (1996: 5) assume that “...authors in the twelfth, thirteenth and fourteenth centuries generally wrote the English that they spoke – whether in London, Hereford, Peterborough, or York”. Suppose that a grammatical form is more or less a reflection of its colloquial expression of those times, then it would be possible to comparatively investigate morpho-syntactic forms between carefully selected Middle English texts, those in Early Modern English dramas, and those in later stages including Present Day English conversation. This view makes it implausible to draw the line between semantics and pragmatics because meanings of each expression are rooted in any immediate discourse (Traugott and Heine 1991; see Jacobs and Jucker 1995 for two subtypes of historical pragmatics). That is to say, this study examines semantic harmonization of the modal verb-adverb construction in colloquial usage in the history of English.

In order to examine colloquial usage at each synchronic stage, I chose the following verse texts. I mainly analyzed the texts illustrated in (2). The frequencies

of each modal verb-adverb construction at each stage are to be illustrated later.

## (2) Primary

Old English (=OE):	University of Virginia Electric Text Center
Middle English (=ME):	<i>The Canterbury Tales</i> (=CT, 14C)
Early Modern English (=EModE):	Shakespeare's Works (16/17C)
Present Day English (=PDE):	Brown/London-Lund Corpora (20C)

## (3) Supplements

- 13C: *The Owl and the Nightingale* (=O&N, verse)  
 14C: *Sir Gawain and the Green Knight* (verse)  
 15C: *Mankind, The Wakefield Pageants* (early dramas)  
 16C: *Mundus et Infans* (an early drama)

## 3. Analysis

Goossens (1982: 78) argues that clear epistemic meanings are hard to find out in ME. Bybee (1988: 258-9) makes a similar observation: “[A]bout one-third of the examples of *may* in *Sir Gawain and the Green Knight* can be interpreted as either root or epistemic possibility; the rest are unambiguously root”. I agree to this point; however, I assume that it becomes possible to present epistemic meanings in outline from the viewpoint of semantic harmonization of the modal verb-adverb construction. The following example shows a semantic contrast between the co-occurrence of *may well* and a single occurrence of *may*. Examples in focus are underlined from here on.<sup>2</sup>

- (4) Arthur: *Neverpelece to my mete I may me wel  
 nevertheless to my food I may:PRES.1sg myself well  
 dres for I haf sen a selly, I may not forsake  
 get.ready because I have seen a wonder I may not refuse  
 ‘Nevertheless, I am probably allowed to begin my meal, because I  
 have seen an extraordinary sight (and) I can not deny (it).’  
 (c. 1375-1400 *Gawain* 474-5)*

In the utterance of (4), the speaker Arthur is conceding: ‘this is not entirely the expected Christmas fare’ (Burrow and Turville-Petre 1996: 198). That is to say, the speaker Arthur would have begun his meal if his expectation had been met, but it was cancelled (i.e. not met). Therefore, the speaker’s speculation on the current situation brings about an epistemic meaning by using the *may well* construction (cf. Traugott and Dasher 2001: 21ff and passim for the notion of generalized invited inference, GIIN). Permission reading would also be fine. In my opinion, *may well* has already established its epistemic possibility meaning at least in Late ME, and if

<sup>2</sup> The glossing conventions are as follows: INF=infinitive; PRES=present tense; PST=past tense; sg=singular; 1=first person; 3=third person.

speakers of those days want to distinguish the original root meaning from the epistemic meaning, they tend to collocate *may* with *well*, as in (4).

This semantic harmonization began to emerge as early as OE. In (5), *may well* indicates epistemic possibility and it is part of a quoted speech.

- (5) *Cweð he: wel þæt swa mæg*  
 say:PST.3sg he well that so may:PRES.sg  
 ‘He said: that will probably (be) so.’ (c. 900 tr. *Bæda’s Hist.* II.i 110)

In ME onward, *may well* continues to indicate or rather reinforce epistemic possibility in various contexts. In (6), the writer makes a speculation that the nightingale is most likely to be thoughtful judging from the context, while in (7), the negative conditional clause *but it be a fool* invites an inferential interpretation from *may well* as being ‘it is no wonder/with good reason’.

- (6) *þe nyhtegale fat and fyhte & hauhfyl waf*  
 the nightingale sit:PST.sg and fight.INF and thoughtful was  
 & *wel myhte for þe vle fo ifpeke hadde and*  
 and well might because the owl so spoken had and  
*hire fpeche fo iladde.*  
 her law-suit so led  
 ‘The nightingale sat and fought, and was thoughtful and might probably be (so), because the owl had spoken and led her case in such a way.’  
 (a. 1250 *O&N Jes.* Oxf. 1291-4)
- (7) *wel may men knowe, but it be a fool,*  
*that every part dirryveth from his hool*  
 ‘It is no wonder, unless they are not fools, that men know that every part derived from the whole.’ (c. 1388-1400 *CT*, A Kn 3005-6)

In Late ME, *may well* is used in the impersonal construction. There are several examples of *may well* that appear in the impersonal construction in *The Canterbury Tales*, yet here I will illustrate one example from the following text, as in (8). There might be much earlier examples of this kind if we refer to a larger corpus; however, it is good to know that such expressions begin to emerge around this stage.

- (8) Cayphas: *so may I well seme, myself if I say it*  
 ‘It will no wonder become me, if I myself say it.’  
 (c. 1400-450 *Coliphizacio* 289-90; in Cawley ed.)

The verb *seme* ‘to become’ is usually an impersonal verb in this sense, so the semantic subject is not the grammatical subject *I*. Therefore, the speaker’s inference is projected towards the proposition, as reflected in the translation (cf. Cawley 1958: 121, note 260). The conditional clause also reinforces the inferential

reading, i.e. epistemic possibility, in this context.

In (9), the character Nowadays becomes scared that another character Mischief (Myscheff) would chop off his head in order to kill the pain there. Considering his own cowardice, Nowadays thinks of it no wonder that he would be called fool. It is hard to diagnose degrees of epistemic meanings because contextual cues are limited. In this case, scales of epistemicity seem to be the same as earlier examples.

- (9) Nowadays: *3e, Cristys crose, wyll 3e smyght my hede wey?  
Ther wer on and on! Oute! 3e xall not assay.  
I myght well be callyde a foppe.  
'Yea, Christ's cross! Will you smite my head away? There were  
one after another! (or There! Where? On and On!) Out! You  
shall not assay – No wonder I might be called a fool.'  
(c. 1465-70 *Mankind* 442-4; in *Eccles* ed.)*

In the following example, *may well* may possibly be considered to indicate more inferential or subjective meaning than other examples. Let me explain about it.

- (10) Hermia: *Lie further off, in human modesty;  
Such separation as may well be said  
Becomes a virtuous bachelor and a maid  
(c. 1595-96 *A Mid-Summer Night's Dream* II ii 56-8)*

In this context, the speaker Hermia assumes that such separation, i.e. not to share a bed, is obligatory for a not-yet-married couple judging from the current belief of those days. Therefore, the speaker sets forth a relatively strong argument on their behaviors. In other examples earlier than (10), it was hard to find out contextual cues as strong as in (10). I assume then that in (10), the scale of epistemicity is stronger than other examples and the speaker's choice of *may well* (not *may*) fits this context, supporting her strong argument.

The following example shows a semantic contrast between the co-occurrence of *might well* and a single occurrence of *might*.

- (11) Antonio: *Th'offence is not of such a bloody nature,  
Albeit the quality of the time and quarrel  
Might well have given us bloody argument.  
It might have since been answered in repaying  
What we took from them, which for traffic's sake  
Most of our city did. (c. 1601 *Twelfth Night* III iii 30-5)*

By using *might well*, the speaker Antonio assumes that such a severe fight, i.e. killing, would have happened considering the bad relation between Antonio and the

city, although the fight was not so severe in reality. This context invokes a quite strong inference towards the possibility of such a fight with which *might well* seems to harmonize better than *might* alone. In the context of a single occurrence of *might*, the inference appears to be less strong. The speaker simply thinks that repaying what they did to the city would be enough for their reconciliation; however, his idea is just a weak speculation. It seems to be impossible to exchange *might well* with *might* in this context. From examining these semantic contrasts in discourse, it can be said that the combination of *may well* has a tendency to imply a stronger epistemicity than a single occurrence of *may* does.

A much stronger epistemic coloring of *may well*, which is close to probability, is hard to find out in my texts around this stage. In PDE, however, this semantically harmonized expression *may well* seems to have semanticized probability in it, as in (12).

- (12) *That... may well be over the line.* (U.S. News, Aug. 10, 1998)

In this example, *well* modifies the preceding modal *may* to strengthen the likelihood of the topic event with certain evidence (in this case, it implies that the suspicious scandal of the former President Bill Clinton with Monica Lewinsky). While it is possible to simply use *may* in this context, it seems apparent that the article writer emphasizes or rather concludes by using *may well* that the suspicious scandal happened at all.

#### 4. Negation

In this section, I will briefly account for the semantics of *may well* with negative particles. Bybee et al. (1994) suggests that while admitting there are many examples of semantically indeterminate use of *may* in *Sir Gawain and the Green Knight*, the meaning of *may* can be regarded as the root possibility reading when *may* co-occurs with the negative particle. The following is excerpted from Bybee et al. (1994: 198).<sup>3</sup>

- (13) *For mon may hyden his harmes, bot vnhap ne may hit.*  
'For a man may/can hide misfortunes, but he cannot undo them.'

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<sup>3</sup> The original text of *Sir Gawain and the Green Knight* seems not to be specified in Bybee et al. (1994). However, judging from the example cited, it seems that the source would be the second edition of the text revised by Norman Davis, which was originally edited by J. R. R. Tolkien and E. V. Gordon, from Oxford University Press. The following is from another text (Burrow 1972):

- (i) *For none may hyden his harme bot unhap ne may hitte*  
'For a man may hide his (spiritual) harm, but cannot unfasten it (get rid of it).'  
(or 'For no-one can conceal his guilt without misfortune befalling.')

This line can be interpreted in two ways. When *unhap* and *hitte* are interpreted as a verb 'unfasten' and a pronoun 'it' respectively, the translation corresponds to the first. In this case, *non* is emended as *mon* 'one'; when *unhap* and *hitte* are interpreted as a noun 'misfortune' and a verb 'hit' respectively, the translation corresponds to the second (*ibid.*: 124).

(c. 1375-1400 *Gawain* 2511)

I totally agree to their suggestion, since examples of *may* from my texts around this stage only have the root possibility reading when they co-occurs with the negative particles. Important is that the meaning of *may well* also indicates root possibility when it co-occurs with negative particles, as follows.

(14) Vxor eius: *Go to another stede! I may not well queasse;*  
*Ich fote that ye trede goys thorow my nese*  
*So hee.*

‘Go somewhere else! I cannot well breathe. Every step that you tread goes through my nose so loudly.’

(c. 1400-450 *Secunda Pastorum* 487-9; in Cawley ed.)

Remember that *may well* is considered to be an epistemic modal idiom resistant to any modification (Hoye 1997: 234). This diachronic frequency-based study also suggests that *may well* has gradually fixed its idiomatic formation, because it has come to disfavor even being negated over history. Small though they are, my texts show that five examples of *may well* with the negative particle in *The Canterbury Tales*, two in Shakespeare’s works, and zero in Brown and London-Lund corpora. This observation seems to point out that *may well* has become semantically or syntactically a fixed expression. Further research will reveal more about this diachronic path.

## 5. Summary and Discussion

In this section, I will summarize the findings thus far. Tables 2 and 3 illustrate patterns of semantic harmonization from a diachronic perspective with their frequencies. Among several significant findings about the evolution and selection of the modal verb-adverb construction, I will focus on two points.

First, as in Table 2, both the number and the proportional frequencies of *may well* have been increasing, while other combinations of modal verbs with *well* have been decreasing over history. I will argue then that the longevity of this co-occurrence can be attributed to the semantic cohesiveness of *may* and *well*, which is fused into the same scope of modality; namely, semantic harmonization. The relatively high frequency also suggests that *may well* has been conventionalized more or less as a fixed epistemic expression over history; namely, a modal idiom. Building on his corpus- based analysis of PDE, Hoye (1997: 234) points out that “MAY WELL is invariable and resistant to any form of modification; paradigmatic substitution of other adverbs, while possible, disrupts the integrity of the meaning this particular collocation conveys”. My texts show that almost all examples of *may well* appear unmodified even with any other adverbs in OE through PDE, except some intensifying adverbs like *very*. Moreover, *may well* has come to disfavor even being negated over time, as I explained in section 4. *May well* is often regarded as being the most problematic among the

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modal verb-adverb construction, since it represents a unity of meaning which is not retrievable from the sum of its individual parts (*ibid.*: 227, note 3; 232ff). However, this frequency-based diachronic study draws a relatively firm conclusion that *may well* is one of the general phenomena of semantic harmonization, as shown in Tables 2 and 3. Furthermore, despite the emergence of many (modal) adverbs in the fourteenth century onward, it is the adverb *well* that *may* has come to choose to form the epistemic modal idiom, as in Table 3. This means that *may* and *well* are most harmonized in its combination synchronically and diachronically, and this study evidences it with their frequencies. It can be considered then that *may* and *well* have developed as a modal idiom.

**Table 2: Co-occurrences with *Well***

	<i>The Canterbury Tales</i> (14C)			<i>Shakespeare's Works</i> (16/17C)			Brown/London-Lund Corpora (20C)		
	PST	PRES	Total	PST	PRES	Total	PST	PRES	Total
<i>May well</i>	5	42	47	17	30	47	41	32	73
<i>Can well</i>	22	13	35	12	9	21	2	8	10
<i>Dare well</i>	0	17	17	...	1	1	...	...	...
<i>Ought well</i>	13	0	13	...	...	...	...	...	...
<i>Shall well</i>	2	9	11	1	5	6	...	...	...
<i>Will well</i> <sup>4</sup>	2	1	3	...	...	...	...	...	...

**Table 3: Adverbs Frequently Co-occurring with *May***

	Old English Verse	<i>The Canterbury Tales</i>	<i>Shakespeare's Works</i>	Brown/ London-Lund Corpora
<i>May well</i>	5	47	47	73
<i>May as well</i>	...	2	16	22
<i>May easily</i>	4	6	8	2
<i>May lightly</i>	...	6	...	...
<i>May chance</i>	...	...	6	...
<i>May haply</i>	...	...	5	...
<i>May happily</i>	...	...	5	...
<i>May perhaps</i>	...	...	3	8
<i>May possibly</i>	...	...	...	4
<i>May hardly</i>	...	...	2	...
<i>May reasonably</i>	...	1	1	...

The other is concerning the gradual development of epistemic meanings in *may well*. The context where *may well* appears in my texts involves certain information to give support for the diagnosis of the relatively strong degrees of epistemicity as

<sup>4</sup> Interestingly, it is explained in the glossary of *Havelok the Dane* (Smithers 1987) that *wile well* 'will well' is a collocational expression in those days, while either *may well* or *can well* are not, although the latter two appear more frequently than the former.

early as OE. Degrees of epistemicity are hard to measure out; however, it is possible to do it if we examine the semantic contrast between the co-occurrence of *may well* and a single occurrence of *may* at a same synchronic stage, as in (11). In almost all cases in my texts, the epistemicity of *may well* is stronger than that of *may*. Hoyer's (1997: 98) comments are compatible with this idea: "MIGHT and MAY favour adverbs which indicate the speaker's degree of confidence". Meaning is quite hard to specify even in context. But several contextual cues make it possible to diagnose degrees of epistemic meanings.

## 6. Concluding Remarks

In this study, I have given a broad outline of the diachronic status and transition of the modal verb-adverb construction, with special focus on *may well*. *May well* has been regarded as being the most problematic in this construction, and then regarded as a modal idiom. However, once we pay attention to the relative frequencies of *may well* in comparison of others, it becomes apparent that *may well* is the most frequently used expression in the modal verb-adverb construction, synchronically and diachronically. Furthermore, the relatively high frequency and longevity of *may well* can be attributed to the semantic cohesiveness of *may* and *well* coalesced into the same scope of modality; namely, semantic harmonization. It is true that this small study is just a preliminary stage for a fuller diachronic analysis of *may well* and the modal verb-adverb construction in general. But findings from this diachronic study meet or rather reinforce those from a synchronic study by Hoyer (1997). It is hoped then that a combination of diachronic and synchronic frequency-based studies will further uncover what is yet to be uncovered in English and other languages.

## References

### (1) Primary Sources

- Benson, Larry D. (ed.) 1987. *The Riverside Chaucer*. Boston: Houghton Mifflin.
- Burrow, J. A. (ed.) 1972. *Sir Gawain and the Green Knight*. Middlesex, England: Harmondsworth.
- Crawley, C. A. (ed.) 1975. *The Wakefield Pageants*. New York: Manchester UP.
- Eccles, Mark. (ed.) 1969. *The Macro Plays. EETS 262*. London and New York: Oxford UP.
- Farmer, J. S. (ed.) 1909. *Mundus et Infant* (facsimile), London and Edinburgh.
- Grattan, J. H. G. and G. F. H. Sykes. (eds.) 1935. *The Owl and the Nightingale, EETS extra series 119*. London and New York: Oxford UP.
- Oizumi, Akio. (ed.) 1991-92. *A complete concordance to the works of Geoffrey Chaucer*. 10 vols. Hildesheim and New York: Olms-Weidmann.
- Smithers, G. V. (ed.) 1987. *Havelok the Dane*. Oxford: Clarendon Press.
- Spevack, Marvin. (ed.) 1969. *A complete and systematic concordance to the works of Shakespeare*. Hildesheim: George Olms Verlagsbuchhandlung.

Tolkien, J. R. R. (ed.) 1964. *Sir Gawain and the Green Knight*. Oxford: Oxford UP.  
University of Virginia Electric Text Center, The Complete Corpus of Old English.  
(<http://etext.lib.virginia.edu/oec.html>)

**(2) Secondary Sources (selected)**

- Burrow, J. A. and T. Turville-Petre. 1996. *A book of Middle English*. 2<sup>nd</sup> ed. Oxford: Blackwell.
- Bybee, Joan L. 1988. Semantic substance vs. contrast in the development of grammatical meaning. *Proceedings of the fourteenth annual meeting of Berkeley Linguistics Society*: 247-64.
- Bybee, Joan L. 2001. *Phonology and language use*. Cambridge: Cambridge University Press.
- Bybee, Joan L., William Pagliuca and Revere D. Perkins. 1994. *The evolution of grammar: Tense, aspect, and modality in the languages of the world*. Chicago: University of Chicago Press.
- Goossens, Louis. 1982. On the development of the modals and of the epistemic function in English. In Anders Ahlqvist (ed.) *Papers from the fifth ICHL*, 74-84. Amsterdam: John Benjamins.
- Guimier, Claude. 1996. *Les adverbess du français*. Paris: Ophrys.
- Hopper, Paul and Elizabeth C. Traugott. 1993. *Grammaticalization*. Cambridge: Cambridge University Press.
- Hoye, Leo. 1997. *Adverbs and modality in English*. London: Longman.
- Jacobs, Andreas and Andreas Jucker. 1995 The historical perspective in pragmatics. In Andreas Jucker (ed.) *Historical pragmatics*, 3-33. Amsterdam: John Benjamins.
- Jacobson, Sven. 1964. *Adverbial positions in English*. Stockholm: Studentbok.
- Jacobson, Sven. 1975. *Factors influencing the placement of English adverbials in relation to auxiliaries*. Stockholm: Almqvist & Wiksell International.
- Jacobson, Sven. 1981. *Preverbal adverbs and auxiliaries*. Stockholm: Almqvist & Wiksell International.
- Krug, Manfred G. 2000. *Emerging English modals*. Berlin: Mouton de Gruyter.
- Langacker, Ronald W. Subjectification. *Cognitive Linguistics* 1: 5-38.
- Lyons, John. 1977. *Semantics, vol. 2*. Cambridge: Cambridge UP.
- Martinet, André. 1964. *Elements of general linguistics*. Trans. by Elisabeth Palmer. Chicago: University of Chicago Press.
- Palmer, F. R. 1995. *Modality and the English modals*. 2<sup>nd</sup> ed. London: Longman.
- Powel, M. 1992. The systematic development of correlated interpersonal and meta-linguistic uses in stance adverbs. *Cognitive Linguistics* 3: 75-110.
- Shibasaki, Reijirou. 1998. Historical analysis of modal verb-adverb co-occurrences in English. *Kansai Linguistics Society* 18:186-196.
- Stein, Dieter and Susan Wright (eds.) 1995. *Subjectivity and subjectification*. Cambridge: Cambridge University Press.
- Traugott, Elizabeth C. 1989. On the rise of epistemic meaning: An example of subjectification in semantic change. *Language* 65: 31-55.

- Traugott, Elizabeth C. and Bernd Heine. 1991. The semantics-pragmatics of grammaticalization revisited. In Elizabeth C. Traugott and Bernd Heine (ed.), *Approaches to grammaticalization* vol.1, 189-218. Amsterdam: John Benjamins.
- Traugott, Elizabeth C. and Richard Dasher. 2001. *Regularity in semantic change*. Cambridge: Cambridge UP.

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