Chapter 2

Changes in the Use of Adjectives, Quasi-Modals, and Lexical Verbs of Obligation and Necessity in Spoken American English[1]

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In recent years, many studies have reported changes in the use of the English emerging modals or semi-modals (e.g. KRUG 2000, LEECH 2003, 2011) and in the use of the core modals, which have been at the center of most synchronic studies of modality for the past decades (cf. HOYE 2005). Less attention, however, has been paid to other expressions of modality, particularly in the field of non-epistemic modality. A few discussions of effective or deontic stance take full verbs and some adjectives into account, but their main focus lies on the particularities of specific genres such as academic or news writing or on cross-language comparisons (e.g. HYLAND 2005, GILTROW 2005, MARÍN ARRESE 2009), not on the analysis of the meanings of these expressions or on their development over time. Quite a few studies have been devoted to the analysis of the frequency and the semantics of particular quasi-modal verbs (e.g. VAN DER AUWERA & DE WIT 2010, NOËL & VAN DER AUWERA 2009), but rarely have various (types) of expressions of obligation been considered together. The aim of this study is to try to fill this gap. Following Nuyts *et al.* (2010) and Van Linden and Verstraete (2011), expressions of desirability are integrated into the framework of deontic modality and a close look is taken at the modal adjectives *necessary, critical, essential, imperative* and *crucial* with *to*-infinitives and in combination with *that*-complements (cf. example 1), at some of the lesser-studied quasi-modals (*be to, had*

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1. This study is a published version of a 2012 draft. For an up-to-date review of the literature and an analysis of an extended database, see JÄGER 2018.

better, be supposed to and *bound to*) and at semantically related verbs of obligation such as *force, oblige, require* and *urge* (cf. example 2) in the spoken language component of the *Corpus of Contemporary American English (COCA)*. Over a period of barely twenty years (1990-2009), almost all of these expressions undergo a marked decrease.

(1) JOHN HAMMOCK, Oxfam America: Well, it's absolutely *essential that the ports be opened* as quickly as possible and that food begin to flow again in Ethiopia as quickly as possible. (19941120, *CBS Sixty Minutes,* COCA)

(2) I'll treat you civilly, I'll be nice to you. […] And then you'*re required to capitulate* totally to whatever I want. (20090214, "Beltway Boys for February 14, 2009", *Fox Beltway*, COCA)

This paper is organized as follows. In section 1, a synopsis of previous research is given, sketching the theoretical framework that is applied in this study. The database and methods of analysis are described in section 2. The results are presented in section 3: after a general overview, a detailed discussion of the selected quasi-modals, modal adjectives and full verbs follows.

1. PREVIOUS RESEARCH

Deontic modality, which has generally received "little specific attention" in comparison to epistemic modality (NUYTS *et al.* 2010, p. 17), is traditionally defined as referring to obligation and permission (e.g. VAN DER AUWERA & PLUNGIAN 1998, p. 81, PALMER 2001, p. 9). It is often distinguished from dynamic modality (expressing abilities and necessities inherent in the participant or in the general circumstances of a situation) (cf. NUYTS *et al.* 2010, p. 17). Nuyts *et al.* argue that unlike dynamic modality, epistemic and deontic modality can be considered attitudinal categories.[2] In their opinion, deontic modality indicates "the degree to which the 'assessor' (typically, but not necessarily, the speaker …) can commit him/herself to the SoA in terms of certain principles" (2010, p. 17). Deontic modality can then be

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2. Note, however, that Palmer, following Jespersen's distinction between moods with and without an element of will (1924, p. 321), considers internal dynamic modality, like deontic modality, to be "concerned with the speaker's attitude towards a potential future event" (2001, p. 8). BIBER *et al.* use the term attitudinal in reference to stance, observing that some modal verbs and verb/adjective/noun constructions such as *It is essential that* …. reflect personal attitudes (1999, p. 975).

viewed as a scalar category, which includes such meanings as advisability (cf. TRAUGOTT & DASHER 2002, p. 106), (comparative) desirability and (moral) necessity (cf. example 3). Nuyts *et al.* propose to analyze the stronger meanings of obligation and permission as separate directive uses ("attempts by the speaker to get the hearer to do something", SEARLE 1976, p. 11, cf. example 4) "in speech act terms, quite like the imperative mood" (2010, p. 16).

(3) You know, one of the great strengths of this president, I don't think he has a mean bone in his body [...] *Sam Donaldson (Off-camera)*: He *better develop* a toughness. (090510, "The Round-table; Economic Mending", *ABC This Week,* COCA)

(4) I received the order from my commander. "All of you boys and soldiers, you *must go* and attack and kill." (19900302, "Children of Terror", *ABC 20/20*, COCA)

Nuyts *et al.* stress that a directive can be "'informed by' a deontic assessment" (2010, p. 24). In their study of modal adjectives, Van Linden and Verstraete also observe that an (illocutionary) directive meaning may be the preferred interpretation of an expression of (attitudinal) deontic modality. However, because of their "fundamentally different nature", directive and attitudinal (qualificational) meanings should be kept apart (NUYTS *et al.* 2010, p. 32). Van Linden and Verstraete hence propose "to shift the core of deontic modality from obligation/permission to desirability" (2011, p. 152). They sketch a semantic map of deontic modality and related meanings for weak and strong adjectives, additionally introducing the criterion of factuality to distinguish deontic meanings (potential realization, example 5) from evaluations of situations that have already been actualized, are being actualized or will certainly be actualized (presupposed realization) as in example 6. (Both examples are taken from Van Linden and Verstraete (2011, p. 153-154).

(5) OBVIOUSLY, when choosing a guitar, it's *important to consider* the style of music you'll be playing…

(6) It is going to be fascinating next season with two big guns, Arsenal and United, head-to-head at the top of the Premiership and in the European Cup. It can be only be *good* for English football that so much quality will be on view in the Champions League…

Van Linden and Verstraete do not make many comments on the actual distribution of evaluative, dynamic, deontic and directive

meanings of the modal adjectives they analyze. In this chapter, the meanings of five modal adjectives will be studied and compared to some of the quasi-modals and lexical verbs of obligation and necessity. Particular attention will be paid to changes in the frequency of use of these expressions in light of observations like Bolinger's more than thirty years ago that "the system of modal auxiliaries [is] […] undergoing [a] wholesale reorganization" (1980, p. 6). This claim has since been substantiated by various studies showing a drastic decrease in the use of core modals such as *must, shall, ought,* etc. in the last century (LEECH 2003, 2011) which is not counterbalanced by the increase in the use of what Krug (2000) calls the *emerging modals,* e.g. *be going to, have (got) to, want to* and *need to*. In this study, following a new line of research, another step is thus taken to "move the discussion beyond examination of its most grammaticalized exponents […] to take into account other carriers of modal meanings" (HOYE 2005, p. 1299).

2. DATA AND METHODS

The Corpus of Contemporary American English (COCA), which contains data from 1990 to 2011 and is continually updated, lends itself to the investigation of recent changes in American English. Since spoken American English is often considered to be at the forefront of change in the use of modals (e.g. LEECH 2003, p. 237, MAIR & LEECH 2006, p. 327-8) and research on modal expressions in spoken American English is still rare (among the few exceptions are MAIR & LEECH 2006, p. 328 and COLLINS 2009), the data was exclusively taken from the spoken language section of COCA which currently contains 90,065,764 words and comprises transcripts from television and radio broadcasts such as *Science* (NPR), *Meet the Press* (NBC), *Newshour* (PBS), *60 Minutes* (CBS), *Crossfire* (CNN) etc. (DAVIES 2011). These programs, which feature political discussions and news interviews, have "institutionalized generic structures" (O'KEEFFE 2006, p. 20) with some "formulaic" sentences, particularly at the beginning and the end of a segment, but an estimated 95% of the material is unscripted conversation (DAVIES 2011). In these particular circumstances, speakers are aware that they are taking part in a television or radio show and may therefore alter their language, e.g. to avoid profane language, dialect or certain pronunciations, but many characteristics of "natural conversation" are still met: speakers frequently repeat, correct and interrupt themselves or others or finish each other's sentences (cf. BIBER *et al.* 1999, p. 1038-1107). The spoken section of COCA is thus

nonetheless considered to "represent 'off the air' conversation quite nicely" (DAVIES 2011).

For this study, as mentioned above, the use of various expressions of obligation (followed by the infinitives of lexical verbs) was examined at two periods of time, 1990 to 1994 (21.967.915 words) and 2005 to 2009 (20.188.338 words). In the case of the particularly frequent verbs *force* (*n=758*), *require* (*n=292*) and *be supposed to* (*n=540*), only the years 1990-1991 and 2008-2009 were considered. The use of *must* in 1990 and 2009 was studied to provide a comparison to the quasi-modals *be to, be supposed, (had/'d) better* and *be bound to*, the adjectives *critical, crucial, essential, imperative* and *necessary* with *to*-infinitives and with *that*-complementation and the full verbs *require, force, oblige* and *urge*.

In total, the meanings of 5900 occurrences were manually analyzed and classified as speaker directives, deontic, dynamic, epistemic, evaluative, ambiguous or as having another meaning. As in many studies of modal verbs (e.g. PERKINS 1983, HUDDLESTON & PULLUM 2002, COLLINS 2009), a distinction between subjective and objective deontic meanings was made. The former reflect the speaker's desires and judgements of necessity and can form the basis for speaker directives with an illocutionary meaning (which are characterized by speaker authority, addressee control, and unsettledness, cf. CONDORAVDI & LAUER 2009). The latter refer to judgements of necessity uttered by people other than the speaker or to obligations arising from laws, social contracts and agreements (cf. example 7). Only those occurrences which do not contain any element of human will are considered dynamic (cf. example 8).

(7) *James McDougal:* Well, I don't know who has them, but I have a contract with Bill and Hillary Clinton that by June 1st, 1993, they *were to deliver* back to me all the Whitewater records, which were all the records. (19940313, *ABC Brinkley*)

(8) For a normal pregnancy to occur, a woman's egg *must travel* through the Fallopian tube to get to the uterus where it is fertilized. (19901027, *CNN Health*)

To determine the statistical significance of the observed changes in frequency, the chi-square test was used. Scores that exceed 3.84 suggest that if the null hypothesis (the observed frequencies can be explained by random variation) is true, the probability of obtaining the observed result is smaller than 5%.

3. RESULTS

The expressions examined here vary considerably in frequency. Table 1 shows the combined frequencies of all expressions except *be supposed to* (for which only the years 1990-91 and 2008-09 were studied). With a frequency decreasing from 10.2 words per million in 1990-4 to 5.7 words per million in 2005-09, the adjectives that can express modal meanings are particularly rare, whereas the three quasi-modals *be to, had/'d better* and *be bound to* are almost seven (73.8 w/m) to ten times (55.8 w/m) as frequent in the same periods. The comparison to the core modal *must* shows that whereas the combined frequencies of the quasi-modals and verbs almost attain the same level of frequency as *must* in 1990-94, the three quasi-modals, the four full verbs and *must* are nearly on an equal level of use 10 to 15 years later. There is a highly significant decrease in the use of all three groups of expressions; however, with a reduction of 69.3%, the most pronounced decline occurs in the case of *must.*

To present the meanings of these expressions and significant changes in their use over time, I will now turn to each of these groups individually, starting with the group of quasi-modals.

	1990-94*	2005-09*	Change	Chi^2	*n* (Period 1 | 2)
Adjectives	10.2	5.7	- 48.8%	25.2	223 | 115
Quasi-Modals	73.8	55.8	- 24.7%	58.9	1406 | 913
Full Verbs	103.2	59.0	- 37.1%	110.3	888 | 448
- must –	187.6	57.7	- 69.3%	278.7	813 | 227

Table 1. – The combined frequencies of occurrences of the analyzed expressions (except for *be supposed to*) + infinitives (lexical verbs) in the spoken section of COCA (in words per million, non-negated forms + 0-/2 wildcards, infinitive), *Periods: full verbs: 1990-1, 2008-9, *must*: 1990, 2009

3.1. Quasi-Modals

The verbs *be to, be supposed to, (had/'d) better* and *be bound to* occupy an intermediate position on the modal verb – full verb cline (QUIRK *et al*. 1985) and are considered semi-modals, quasi-modals or periphrastic modals (BIBER *et al.* 1999) or modal idioms and semi-auxiliaries. Like Collins (2009), I will use quasi-modals as a cover term here. These verbs form a very heterogeneous group of expressions. Not only do they express deontic, directive, dynamic and epistemic meanings, but they can also have additional meanings (cf. average frequencies in table 2 below). On average, more than 90% of all occurrences of *be to* express one of these other meanings; in the case

of *be supposed to,* the number goes down to 47.9%. *Be bound to*, however, is exclusively used for the expression of epistemic and deontic meanings.

	deontic, directive, dynamic, epistemic	additional meanings					indet.
be to (n=1382)	3.3	cond. 26.1	plan 2.2	destiny 0.8	future 0.9	possibility 0.2	0.3
be supposed to (n=540)	17.3	plan 11.5		expectation 4.3		possibility 0.1	
had/'d better (n=822)	19.3	adverse consequence 0.5				threat 0.3	0.1

Table 2. – Average frequencies of the meanings of *be to, be supposed to* and (*had/'d*) *better* in words per million (w/m)

Be to is primarily used in the protasis of conditional sentences (on average 26.1 times per million words), particularly in counterfactual conditionals (18.0 w/m) such as example (9). *Be to* can also refer to a future event, or an event in the past that, in retrospect, is known to occur ("destiny", cf. example 10), in which case it can sometimes be replaced by *would* (cf. DECLERCK 2010). When *be to* expresses a planned (scheduled) future event as in example (11), it can be considered more temporal than modal (COLLINS 2009, p. 85). The planning of an event can raise certain expectations for it to actually occur and is certainly related to the obligation meaning resulting, for example, from joint decisions (cf. example 7 above). As shown in table 3, examples in which *be to* expresses an obligation mainly refer to rules, laws and reported orders. Note that, following Goldberg and Van der Auwera (2012, p.13-14), 207 occurrences of *be to* with *blame* in object-raising constructions (cf. example 12) and in fixed phrases such as *which is to say* were excluded from the analysis.

(9) Mr. THORNBURGH: I would mislead you if I *were to indicate* that any substantial portion of those assets are going to be recovered (19900724, "Report on Oil Trading", *CNN Moneyline*)

(10) And he worked out his ideas in short story form and in poems, and they form the germs of what *were to* become his major plays. 20050413, *NPR Talk of the Nation*)

(11) Pope John Paul has put off a visit to Bosnia because of safety concerns. […] The Pope *was to say* a public Mass in Sarajevo Thursday. (19940907, *PBS Newshour*)

(12) I don't think John Edwards is a good father. […]. He *is to blame*. (20100315, *CNN Velez*)

With regard to *be supposed to,* Traugott observes that "expect" is one of two meanings that were borrowed from Middle French *supposer* and which, following the path of expectation > volition / intention > obligation, developed a deontic meaning. Epistemic uses developed out of the "hypothesize" sense (TRAUGOTT 1989, p. 45, 51; for a detailed discussion of the controversy surrounding the semantic development of *be supposed to* see NOËL & VAN DER AUWERA 2009). In the corpus sections studied here, speakers predominantly use *be supposed to* to express objective deontic meanings (cf. table 3 and example 13).

> (13) The U.S. government knew about this, helped develop this plan […] It was secret. Nobody *was supposed to talk* about it and we did a damn good job of keeping a secret (19911122, *ABC 20/20*)

With (*had/'d) better,* speakers can not only give advice or orders, but they can also imply a threat or suggest an adverse consequence. In example (14), the speaker, John Morris, admonishes the audience at the Woodstock festival to treat each other like brothers or else the festival would be ruined. *Be bound to* is rarely used in general (*n*=115), and it is especially infrequent with deontic meanings (cf. example 15). Epistemic meanings are much more common (cf. table 3). They often mirror a strong conviction. In some instances, *be bound to* can even be substituted by *will.*

> (14) And you damn well *better treat* each other that way because if you don't, then we blow the whole thing, but we've got it, right there. (20090814, "The 'Young Men With Capital' Who Started Woodstock", *NPR Fresh Air*)

> (15) You're a trustee and you'*re bound to follow* certain rules with respect to that. (19920720, "Clinton Will Bring Money to Cities Says NYC Comptroller", *CNN News*)

> (16) "Murderball" is such a good story that it's *bound to get* the full Hollywood treatment some day…" (20050709, "Review: "Murderball"", *NPR ATCW*)

Quasi-Modal	be to		(had /'d) better		be supposed to		be bound to	
Meaning / Time	*1990-4*	*2005-9*	*1990-4*	*2005-9*	*1990-1*	*2008-9*	*1990-4*	*2005-9*
speaker directives	0.4	0.4	5.6	3.3*		0.3		
subjective deontic	0.3	0.3	16.1	12.0*	1.3	2.2	0.1	0.0
obj. deontic	2.5	2.6	0.8	0.7	14.3	10.8*	0.2	0.3
epistemic					0.8	1.7	2.9	1.6*
ambiguous					1.3	1.8	0.1	
total (modal)	3.2	3.3	22.4	16.0**	17.8	16.8	3.3	2.0*

Table 3. – Modal meanings of the quasi-modals in words per million
(*:$p < 5\%$, $Chi^2 > 3.84$ | **: $p < 0.01\%$, $Chi^2 > 10.83$)

In the case of *be supposed to,* only the reduction in the use of objective deontic meanings deserves special mention (cf. table 3). However, the use of (*had/'d) better* and *be bound to,* which primarily express modal meanings (cf. above), declines significantly. These expressions, which share some syntactic characteristics with auxiliary verbs (cf. QUIRK *et al.* 1985, p. 141-143), thus seem to suffer the same fate as the core modals (the use of *must* and modal *need* declines by more than 30% between 1990 and 2009; *p<0.01%*).

3.2. Adjectives

As we have seen before, the selected adjectives are comparatively rare in the spoken section of COCA (as opposed to academic writing, for example). Strong adjectives such as *indispensable, needful* and *vital* were in fact too infrequent in our corpus to be included in this study. Table 4 shows that *crucial* and *imperative* are also not very common in the spoken language section of COCA and that the changes in their frequency are statistically insignificant. There is, however, a significant decline in the use of *necessary* and *essential* between 1990-1994 and 2005-2009.

	1990-1994 (P1)	2005-2009 (P2)	Diff in %	Chi^2	n (P1)	n (P2)
necessary	6.19 (6.01)	2.48 (2.28)	-59.7%	32.3	133	50
essential	1.64 (1.55)	0.84 (0.69)	-48.6%	5.3	36	17
crucial	(0.59)	(0.40)	-32.2%	0.8	13	8
imperative	(0.68)	(0.84)	23.3%	0.4	15	17
critical	1.18 (1.00)	(1.14)	-3.7%	0.0	26	23
total	10.24 (9.97)	5.70 (5.35)	-44.4%	27.0	223	115

Table 4. – Development of the frequencies of selected adjectives in w/m

In table 4, the numbers in brackets reflect only the occurrences of these adjectives with a deontic, directive or dynamic meaning. In contrast to Van Linden and Verstraete who claim that adjectives with a strong degree of desirability "do not occur in non-modal evaluative expressions" (2011, p. 154), I found examples of *necessary, critical* and *essential* being also used to make personal evaluations. This is the case in example (17), where the speaker comments in retrospect on the desirability / necessity of the participation of the Syrian delegation at the Middle East Conference in Madrid in 1991.

The majority of the meanings expressed by the examined adjectives, however, are deontic (cf. table 5). In a rather small number of cases, subjective deontic assessments form the basis for speaker directives (cf. example 18 where a soldier repeats an order he received).

(17) And finally, the Syrian delegation arrived during the day. *voice-over* They have said very little so far, have kept a very low profile, but of course it has been very *critical* that the Syrians take part (19911029, *ABC Nightline*)

(18) When you hit the beach, no matter where you hit, drive right straight forward into any objective in front of you. Destroy all the installations there are in front of you, and it's *imperative that* all these defenses be reduced as quickly as possible. (19940605, "Events of June 5th, 1944 Recalled", *NPR ATC*)

	necessary	*critical*	*essential*	*imperative*	*crucial*	total 1990-4	total 2005-9
speaker directives	0.09			0.05		0.14	0.15
subjective deontic	2.16	1.07	1.07	0.69	0.43	6.83	3.86*
obj. deontic	1.47		0.02		0.05	2.05	0.99*
dynamic	0.47		0.02		0.02	0.68	0.30
evaluative	0.17	0.09	0.09	0.02		0.46	0.30

Table 5 – Average frequencies of use of selected adjectives in w/m (*:*p* <5%)

In most other cases, speakers merely present their personal opinion on what should be done in a specific situation. The database from which the examples stem is naturally prone to this type of comment. Many of the political talk shows and news reports feature experts who give recommendations. This is also commented by Van Linden who observes that deontic constructions which enable the speaker to advocate the realization of a certain state of affairs in the real world are particularly frequent in newspapers and radio broadcasts "in which the (reported) speaker ventilates his/her opinion about a specific state or event" (2010, p. 728, cf. example 1). It is also interesting to note that

there is a significant reduction in the use of these subjective deontic meanings as well as in the use of objective deontic meanings between 1990-4 and 2005-09 (cf. table 5).

3.3. Full verbs

In order to find out if the same trend towards a decline that affects the core modals, the quasi-modals and the modal adjectives also applies to non-modal expressions of obligation, I analyzed some full verbs which can express obligation and necessity, finding a significant decline in the use of *insist that, demand that/to, force, urge, require (p<0.001)* and *oblige (p<0.05)*. The meanings of *oblige, urge, force* and *require* followed by (up to two wildcards and) an infinitive were then manually analyzed. As table 6 shows, there is a highly significant decrease in the use of all four verbs. *Force,* the most frequent one, declines by 45.0%, and *oblige*, the least frequent one, by even 60.9%.

verb	force		require		urge		oblige	
period of time	1990-1	2008-9	1990-1	2008-9	1990-94	2005-09	1990-94	2005-09
n=	510	248	188	104	362	198	39	14
sp. directive	0.12		0.12	0.13	2.05	0.94*		
subj. deontic	2.56	1.58	0.93	1.71	0.09	0.15	0.18	
obj. deontic	35.78	21.43**	18.93	10.52**	14.34	8.67**	0.96	0.50
dynamic	16.73	7.63**	1.39	0.92			0.64	0.20*
indeterminate	1.28	0.53	0.35	0.26				
ambiguous	2.79	1.45	0.12	0.13				
- total -	59.24	32.61	21.84	13.67	16.48	9.76	1.78	0.69
	-45.0% **		-37.4% **		-40.5% **		-60.9% *	

Table 6. – Meanings of selected full verbs (+ 0-2 wildcards + infinitive) in w/m, *: $p<1\%$ ($3,84 <Chi^2<10,83$); **: $p<0.1\%$ ($Chi^2>10.83$), d.f.=1

Compared to the quasi-modals with their wide range of meanings, these full verbs form a rather homogenous group. Speakers use them mainly for the purpose of reporting obligations resulting from social contracts (e.g. legal documents or company rules) or describing somebody else's desires or orders (cf. example 19). *Force* is also often used to refer to dynamic necessity, arising, for example, from illness or natural disasters (cf. example 20). In this sample, speakers rarely (in less than 5% of all cases) resort to using *force, require, urge* and *oblige* to utter directives or subjective deontic statements.

(19) He *urged her to take* her case to court, to challenge the law that makes assisted suicide a crime. (19941120, "Whose Life is it Anyway", *CBS Sixty*)

(20) Experts say getting over the mental trauma of a disaster like Hurricane Katrina normally takes about three years. […] *Dr. Saussy*: Our young people here in New Orleans *were forced to face* a very adult situation, and, […] its [sic] had some consequences. (20090828, "Evening News for 08/28/2009", *CBS*)

This ratio is a lot different in the case of the adjectives, which are overwhelmingly used for the expression of the speaker's wishes or orders (70.2%, cf. table 5), whereas on average, only 27.4% of all occurrences of the modal *must* in 1990 and 2009 are descriptive. The quasi-modals present a mixed picture, with *be to* and *be supposed to* being used much more often to describe rules and obligations than to express the speaker's personal judgements of necessity and desirability. The latter dominate in the case of (*had/'d) better* (cf. table 6). Thus, there is not only a considerable difference in frequency (cf. table 1), but the evidence also points to a functional division of labor between quasi-modals, adjectives, and full verbs with modal meanings.

CONCLUSION

Extending the notion of deontic modality to adjectives before *that*-clauses and in extraposition constructions, as proposed by Van Linden and Verstraete (2011), I examined the use of five adjectives that can express deontic meanings in the spoken language component of COCA. In order to have a fuller picture of the distribution of the expression of obligations in present-day English, the same model was also applied to four quasi-modals and some full verbs with related meanings. It was shown that whereas the modal adjectives primarily refer to the speakers' desires and judgements of necessity, the full verbs are mainly used to report the existence of obligations and requirements. In the case of the quasi-modals *be to* and *be supposed to,* other meanings prevail, whereas the occurrences of (*had/'d) better*) predominantly have subjective deontic meanings.

With a reduction rate ranging between 28.6% (in the case of (*had/'d) better*) and 60.9% (*oblige*), the majority of the analyzed expressions decline significantly in use in the short period between 1990-1994 and 2005-2009 (exceptions are *crucial, critical,* and *be supposed to* with statistically insignificant reductions of 33.0%, 3.7% and 3.1%, and *imperative*, where an increase of 23.3%, below the level of statistical

significance, is observed) – a tendency that might also spread to other genres. The expressions studied here thus seem to follow the same trend towards decline as that which has often been documented in the literature on most of the core modal auxiliaries (cf. MAIR & LEECH 2006, LEECH 2003, 2011). This decline affects deontic and directive meanings as well as dynamic uses, albeit to different degrees (subjective deontic meanings seem less concerned). It seems unlikely that parts of the gap between the frequent, decreasing core modals and the less common semi-modals are closed by an at least relative increase in the use of the analyzed expressions. Instead, the overall decline in the use of the core modals and the expressions of obligation studied here might be indicative of considerable alterations in speaker behavior that could, for instance, be rooted in cultural changes in the American society (cf. MYHILL 1995, FAIRCLOUGH 1992, LEECH 2003, MILLAR 2009). The causes for this development will be a topic for further research.

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