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An Van linden

MODAL ADJECTIVES

ENGLISH DEONTIC AND EVALUATIVE
CONSTRUCTIONS IN SYNCHRONY AND DIACHRONY

TOPICS IN
ENGLISH LINGUISTICS

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Modal Adjectives

Topics in English Linguistics

75

Editors

Elizabeth Closs Traugott
Bernd Kortmann

De Gruyter Mouton

Modal Adjectives

English Deontic and Evaluative Constructions
in Synchrony and Diachrony

by

An Van linden

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Abbreviations

2	second person
3	third person
<i>a</i>	ante (preceding a date)
AC	after Christ
AP	adjectival phrase
AVL	An Van linden (in quotes or examples)
BC	before Christ
CB	Cobuild Corpus
CHEL	Cambridge History of the English Language
CEMET	Corpus of Early Modern English texts
CLMETEV	Corpus of Late Modern English texts
<i>c</i>	circa (preceding a date)
CTP	complement-taking predicate
COMP	complementizer
DAT	dative
DEM	demonstrative
EC	extraposition construction
ECM	exceptional case marking
EME	Early Middle English
EModE	Early Modern English
EOE	Early Old English
FEW	Französisches etymologisches Wörterbuch
GEN	genitive
IND	indicative
INF	infinitive
KAK	knowledge or acquisition of knowledge
LME	Late Middle English
LModE	Late Modern English
LOE	Late Old English
ME	Middle English
MED	Middle English Dictionary
NOM	nominative
NP	noun phrase
OE	Old English
OED	Old English Dictionary

xx *Abbreviations*

OV	object-verb
PDE	Present-day English
POPC	post-predicate construction
PP	prepositional phrase
PPCME	Penn-Helsinki Parsed Corpus of Middle English
PPCEME	Penn-Helsinki Parsed Corpus of Early Modern English
PRON	pronoun
PRS	present tense
PST	past tense
PRT	particle
REL	relative
SG	singular
SBJV	subjunctive
SLC	subjectless construction
SoA	State of Affairs
SOV	subject-object-verb
SVO	subject-verb-object
TAM	tense, aspect, mood
TLF	Trésor de la langue française
TOE	Thesaurus of Old English
VO	verb-object
WB	Wordbanks Online: English
YCOE	York-Toronto-Helsinki Parsed Corpus of Old English Prose

Introduction

This book revisits the notion of deontic modality and related conceptual categories from the perspective of an under-researched category in the modal domain, i.e. that of adjectives. The literature on modality has typically concentrated on the category of modal verbs, in language-specific studies (e.g. Palmer 1979; Heine 1995), as well as cross-linguistic ones (e.g. Palmer 1986, 2001; Bybee, Perkins, and Pagliuca 1994), although there are some recent works that focus on also non-verbal categories, like the papers in Hansen and De Haan (2009). The main aim of this book is to show that the analysis of modal adjectives in English, as in the extraposition constructions in (1) and (2), significantly changes our understanding of modal semantics, specifically with respect to deontic meaning and how it relates to other domains within and beyond modality.

- (1) It was **essential**, he said, that money was better distributed, so that it reached the poorest people. Money was power and without it, Professor Desai said, the millions of poor in India would remain without a true say in the running of their country. (CB, bbc)¹
- (2) You can indulge the shortcomings of a friend a certain number of times and then, unwittingly, they go over the limit. ... there comes a point when you decide that in total they are unforgivable and can no longer be overlooked. ... Sometimes it may be wholly **appropriate** not to forgive or forget. If your partner begs forgiveness and swears he will never do the same again, you may know in your heart of hearts that he's just confessing to get *carte blanche* to repeat the dirty deed. (CB, ukmags)

Traditionally, deontic modality has been defined in terms of the concepts of obligation and permission: in their deontic meanings, verbs like *must* express an obligation to carry out a certain activity, while verbs like *may* express permission to do it (cf. Lyons 1977: 823–841; Palmer 1979: ch. 4;

1 The Present-day English data are extracted from the COBUILD corpus (marked with CB) and are reproduced with the kind permission of HarperCollins Publishers. I also indicate the subcorpus from which the examples are taken. More generally, all examples in the introduction are extracted from corpora, for which I use the standard abbreviation. More information on the corpora (and subcorpora) can be found in section 3.2.

2 Introduction

Van der Auwera and Plungian 1998: 81). The study of adjectival constructions like (1) and (2), however, seriously challenges such traditional accounts since these adjectives cannot encode the supposedly core deontic meanings of obligation or permission. Rather than imposing an obligation or granting permission, the structures in (1) and (2) merely describe the degree of desirability for a State of Affairs (SoA)² to take place. Thus, the speaker uttering the expression in (1) does not oblige anyone to distribute money in a better way, but merely states his personal opinion that he regards it as highly desirable. Similarly, the speaker in (2) does not specifically allow anyone not to forgive or forget, but again just uses the construction to report on how desirable he or she thinks this is. In keeping with Nuyts, Byloo, and Diepeveen (2005, 2010), I will argue in this book that deontic modality should be thought of as a qualificational category covering attitudinal assessments like (1) and (2), while obligation and permission are illocutionary notions including directive speech acts.

Another finding that warrants reassessment of traditional modal semantics relates to patterns of polysemy. There is solid evidence that verbs with deontic meanings are often also polysemous with dynamic and epistemic meanings (cf. Coates 1983; Sweetser 1990; Goossens 1999; Traugott and Dasher 2002: ch. 3; Van Ostaeyen and Nuyts 2004). Deontic adjectives are different from deontic verbs in that they are often polysemous not just with dynamic modal meanings, as in (3), but also with meanings beyond the modal domain, as shown in (4).

- (3) This should make you want to go to the toilet frequently. Although it may sting the first few times you go, this usually gets better the more water you pass. It is **essential** to keep emptying the bladder if you are to flush out the germs. (CB, ukephem)

The structure with *essential* in (3) does not express deontic meaning as in (1), but rather indicates a necessity that originates in the physical make-up of the human body. The only way to chase germs out of your bladder is to keep urinating. Unlike in the case of (1), this type of necessity does not involve an ‘attitudinal source’ (cf. Nuyts 2005), as it does not render a personal opinion, but it is similar to a natural law instead. In this book, this type of circumstantial necessity is viewed as a subcategory of dynamic modality, specifically SoA-internal or ‘situational’ dynamic necessity (cf.

2 The term ‘State of Affairs’ is used here to refer to any type of situation, event or state, which can be evaluated in terms of its existence (cf. Dik 1989: 46–47).

Nuyts 2005, 2006) (the example will be used again in section 2.3, example [44] and in 8.3.4, example [74]). The polysemy exemplified by (1) and (3) is well-known from the analysis of modal verbs, but the polysemy of adjectives like *appropriate* is less familiar.

- (4) The system offers callers confidentiality and accepts calls day or night and weekends too. ... “As an IT consultancy, it’s **appropriate** we’re taking the initiative and using the latest IT technology,” says Gary. The service employs INFOTAP 2000, a Windows-based software which enables audio information stored on a personal computer hard disk to be accessed by phone. (CB, today)

The structure with *appropriate* in (4) clearly does not convey situational necessity, yet its meaning is also quite distinct from that in (2). While in (2), the speaker talks about not forgiving or forgetting as virtual or potential SoAs, the SoA evaluated in (4) has a different factuality status: it is taking place at the moment of speech. The next sentence justifies this assessment. More generally, the SoAs referred to in propositional complements as in (4) are presupposed to be true. This difference in factuality status of the dependent SoAs in (2) and (4) suggests that constructions with adjectives such as *appropriate* are polysemous between deontic meaning, cf. (2), and what will be termed ‘non-modal evaluation’, cf. (4). This new type of polysemy lends a fresh insight into the semantic structure of the modal-evaluative domain. Comparable contributions to our understanding of modal semantics will come from the study of the semantic development of adjectives like *essential*, the (development of the) patterns of complementation found with the modal-evaluative adjectives, and the semantic refinements that can be made within the categories expressed by the adjectival constructions, as detailed below.

The distinctness of the three conceptual categories introduced above is corroborated by the generality of the adjectives’ patterns of polysemy, in terms of two sets. All adjectives that express a strong degree of desirability in the deontic domain, such as *essential* in (1), are also found in situational dynamic expressions (cf. [3]), but they do not occur in non-modal evaluative expressions. By contrast, adjectives that express a weak degree of desirability in the deontic domain, such as *appropriate* in (2), are attested in non-modal evaluative expressions (cf. [4]), but they are not found in situational dynamic expressions. The adjectival constructions therefore suggest that it is useful to distinguish between two semantically coherent lexical classes, namely weak and strong adjectives, as these manifest different patterns of polysemy in the deontic and related domains. The conceptual dis-

tinctions between dynamic, deontic and evaluative meaning on the one hand and the lexico-semantic distinction between weak and strong adjectives on the other will be integrated into what I will term a ‘conceptual map’, which covers not only adjectives, but also verbs, modal auxiliaries and the imperative mood. This map constitutes the backbone of this study and is represented in rudimentary fashion in Figure 1. The case-studies presented in this book will demonstrate its internal consistency and diachronic and synchronic applicability, which is evident from its defining pathways of change and its accommodating refinements within each category.

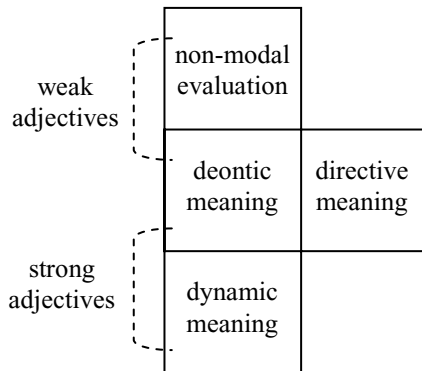


Figure 1. A conceptual map based on the study of English modal adjectives

The validity of the conceptual map for diachronic analysis is indicated by case-studies tracing the semantic development of a set of strong adjectives. Examples (5) and (6) show earlier expressions with the adjectives *essential* and *vital*.

- (5) Heate is the **essentiall** propertie of fire (OED 1620 Granger, *Syn-
tagma logicum, or the divine logike* 66)
- (6) And as the science of the Anatomie meaneth, the spirite **vital** is
sente from the hart to the brayne by Arteirs, and by veynes and nu-
tritional blood, where the vessels pulsatiues be lightly hurt
(PPCEME 1548 Vicary, *Anatomy*)

Neither example expresses any of the conceptual categories distinguished above. In (5), *essential* can be paraphrased as ‘constituting the true nature of’, and the meaning of *vital* in (6) can be described as ‘associated with the heart’. (5) and (6) thus testify to premodal stages of *essential* and *vital* respectively. Historical corpus data show that the first modal meaning devel-

oped by the adjectives is that of dynamic modality, which further subjectifies into deontic meaning (cf. Traugott 1989: 35). This dynamic-deontic pathway is very similar to the one proposed for modal auxiliaries such as *can* or *must* (cf. Goossens 1999; Bybee, Perkins, and Pagliuca 1994; Traugott and Dasher 2002: ch. 3). However, the description of the pre-modal stages of the adjectives offers new insights into how the lexical items develop modal meaning in the first place. It will be shown that the development of dynamic meaning crucially depends on the development of two semantic properties, namely relationality and potentiality. The first property allows the adjective to establish a relationship between two concepts, such as *heat* and *fire* in (5), whereas the second property is needed to make sure that the relationship established by the adjective is one of indispensability. Together, these two properties amount to the meaning of situational necessity. They will therefore be thought of as the conditions of entry into the conceptual map of modal-evaluative meaning. The case-studies themselves confirm that the map's two modal categories, dynamic and deontic modality, are diachronically ordered.

In addition to the adjectival matrix, the (development of the) complement patterns found with the adjectives offer an interesting perspective on the modal-evaluative domain as well. The literature on complementation is also strongly biased towards the category of verbs, but undeservedly so, as the adjectival constructions offer a diversified picture of semantic and formal types of complements. The semantic types include propositional complements, which are part of non-modal evaluative constructions as in (4), and mandative complements, which occur in deontic expressions such as (1) and (2). In formal terms, the adjectives studied here pattern with *that*- and *to*-clauses. Some further examples are given in (7) and (8).

- (7) “Before business you must get well; this is the best wine.” She refused it feebly. He poured out a glass. She drank it. As she did so she became self-conscious. However important the business, it was not **proper** of her to have called on him, or to accept his hospitality. (CLMETEV 1905 Forster, *Where angels fear to tread*)
- (8) If the bed is to fold neatly back into its box, you must measure accurately and ensure that every component is cut to exactly the right size. Be particularly careful when securing the piano hinges – it's **essential** that they're screwed on straight. (CB, ukmags)

In (7), the speaker expresses his or her disapproval of her (i.e. Miss Abbott's) having called on him (i.e. Gino). The construction thus expresses non-modal evaluative meaning; the propositional content under assessment

is coded by a *to*-infinitive. In (8), screwing the hinges straight onto a partially self-made bed is necessary to be able to fold it back neatly into its box. In this dynamic expression, with the necessity originating in the nature of the bed and box, the complement takes the form of a *that*-clause. Together with (1) to (4), the examples indicate that the formal distinction between *that*- and *to*-clauses does not correspond to the semantic distinction between mandative and propositional complements on a one-to-one basis. More importantly, I will argue that from the perspective of complementation, the non-modal category of evaluation is considerably different from the modal categories of dynamic and deontic meaning, which closely resemble one another. In fact, the complements of dynamic expressions such as (3) and (8) are formally indistinguishable from those of deontic expressions (cf. [1] and [2]), so that in this study mandative complements are taken to include the complements of dynamic constructions as well. This seems to put into perspective the emphatic distinction between dynamic and deontic modality advocated in the literature on modality (e.g. Nuyts 2005, 2006). In any case, the data show that strong adjectives invariably combine with mandative complements, while weak adjectives pattern with both mandative and propositional ones, across the various stages of the English language. This finding clearly supports the diachronic and synchronic applicability of the conceptual map.

Even if all combinations of semantic and formal type of complement are constructionally possible, some of them are more marked than others. In this book, I will propose a functional account of the various combinations, that is, I aim to account for how the formal types are used and what they mean. Moreover, it will be found that this markedness can shift diachronically. For mandative complements, for instance, we can note a change from a predominance of *that*-clauses in Old English to one of *to*-infinitives in Middle English, a development analogous to that of complements of verbs with a volitional element, described by Los (2005). By documenting the origin, development and distribution of *that*- and *to*-clauses with the adjectives studied, this book also helps to fill the gap in the literature on (adjectival) complementation.

In addition, the study of the diachronic development of the complement patterns further substantiates the validity of the conceptual map for diachronic analysis by pointing to a developmental relation between deontic and non-modal evaluative meaning. Specifically, it is shown that deontic complements are diachronically prior to evaluative complements. Like in the case-studies of the adjectival matrices, two pathways can be distinguished. One pathway has a remarkable constructionally mixed pattern as the transitional stage, whereas the other involves bridging contexts (Evans

and Wilkins 2000: 550). Together with the arguments from the semantic development of the adjectives, the complementation data thus show that the vertical axis of the map can be defined as a diachronic pathway of change.

The evidence for the synchronic validity of the conceptual map lies in its potential for semantic refinement. Detailed analysis of Present-day English corpus examples shows that the categories of the map can be further subdivided. Crucially, each category on the vertical axis has a different internal organization, whereas the two adjacent categories on the horizontal axis have a similar one. Consider the deontic expressions in (9) and (10).

- (9) Your concern seems to spring from an insecurity about him and his relationship with you, and perhaps it's just as **important** to resolve that insecurity as your present anxiety about AIDS. It can poison your relationship with him if you feel you can't trust him. (CB, uk-books)
- (10) A large number of people who have AIDS are homosexual men. But it's **important** to remember that AIDS can affect other people too. Any incurable disease is frightening, especially when it is infectious and when so much about the disease is still unknown. (CB, ukephem)

In these examples, the deontic meaning seems to function at two different levels. In (9), the speaker says it is important that the hearer should resolve his or her present insecurity and anxiety about AIDS. The SoA that is assessed as important clearly relates to the outside world: the hearer has to talk with his or her partner and needs to see a doctor. In (10), by contrast, the SoA that is assessed as important relates to the speaker's argumentative purposes. The speaker uses this expression to encourage the hearer to focus mentally on the propositional content 'AIDS can affect other people too'. I will term examples such as (9) 'SoA-related' uses, and those such as (10) 'speaker-related' uses (cf. Verstraete 2007: ch. 9). Interestingly, these two levels have also been observed for other linguistic phenomena which (may) have a modal flavour, such as interclausal relations (e.g., Davies 1979: 146–176; Sweetser 1990: 76–112; Verstraete 2007: ch. 9). With regard to example (10), it can further be noted that its specific meaning correlates with a particular constructional make-up: the present indicative matrix verb is complemented by an extraposed *to*-clause containing a cognition verb, which is in turn complemented by a secondary *that*-clause. As this pairing of meaning and form is recurrent in the Present-day English data, I will argue that it constitutes a partially filled construction in the sense of Goldberg (1995). Significantly, the same distinction between SoA-related and

speaker-related uses can be found in the directive domain, whereas the categories of non-modal evaluation and dynamic modality feature quite different sets of subtypes. These differences in internal organization of the categories on the vertical axis of the map confirm their distinct conceptual make-up (and hence, the need to distinguish between them), whereas the similarity of the categories adjacent on the horizontal axis may explain why these have typically been conflated in the literature (e.g. Nuyts, Byloo, and Diepeveen 2010).

The discussions in the following chapters are based on qualitative and quantitative analyses of diachronic and synchronic corpus data. This empirical usage-based approach is couched in a theoretical framework that can broadly be called ‘cognitive-functional’ in that it builds on insights developed in functional theories (e.g., Functional Grammar [Dik 1989, 1997ab; Halliday 1994]) and cognitive theories (e.g., Cognitive Grammar [Langacker 1987, 1991]), including constructionist approaches (e.g. Goldberg 1995). These frameworks typically focus on the lexicon-syntax interface and assume a symbolic relation between form and function of linguistic units. In some places, I will also refer to more specific claims proposed by these frameworks, such as, for example, the functional analysis of the clause (see chapter 6).

This book is organized as follows. The first two chapters concentrate on the structure of the modal-evaluative domain and on the category of adjectives. Chapter 1 presents the literature on modality and associated categories. It discusses the basic categories that are traditionally assumed to make up the modal domain – dynamic, deontic and epistemic modality – and various types of relations between them. In addition, it homes in on some categories ‘at the modal edge’ that are relevant to this study, such as evaluation.

Chapter 2 focuses on the set of adjectives studied, and relates insights from the modal-evaluative domain to the adjectival constructions. Importantly, it proposes a redefinition of the category of deontic modality that covers adjectives as well as modal auxiliaries, and it incorporates the lexico-semantic and conceptual distinctions introduced above into a conceptual map (cf. Figure 1), which forms the main thesis of this book.

The next four chapters (3–6) present the diachronic analysis of the complex adjectival constructions into an adjective-focused part, a complement-focused part, and a construction-focused part. Chapter 3 first discusses the data and methods used in this diachronic analysis: it details how the various adjectives were selected and in which corpora they were searched for.

Chapter 4 details the diachronic development of a set of strong adjectives towards (parts of) complement-taking matrices. The adjectives studied

are the Latin or Romance loans *essential*, *vital*, *crucial* and *critical*. The case-studies show that they all start off with a descriptive, non-modal meaning in English, and that the first type of modal meaning they develop is invariably situational dynamic meaning, with deontic meaning developing out of this dynamic meaning through subjectification (Traugott 1989). Thus, this chapter offers arguments for the diachronic applicability of the conceptual map: the synchronic patterns of polysemy of the strong adjectives have developed from a situation in which the lexical items could express only one type of modal meaning (i.e. dynamic modality) in addition to their original non-modal meanings.

Chapter 5 presents the second part of the diachronic analysis, concentrating on the clausal complement patterns of the adjectival constructions. It examines the origin and development of the two most frequent formal types of clausal complement, i.e. *that*- and *to*-clauses, that are used to code mandative as well as propositional complements as of Old English. The diachronic data confirm that the conceptual map applies across time in that strong adjectives are found with mandative complements only, whereas weak adjectives combine with both mandative and propositional ones throughout the various historical periods. The data of the *that*-clauses also bear out the decrease of subjunctive forms, a development which has been well described in the literature. In addition, the data of the diachronic distribution of *that*- and *to*-clauses indicate that the *to*-infinitive rises in frequency at the expense of the *that*-clause in Middle English, as has been observed with verbal complement constructions by Los (1999, 2005). I will argue that this replacement can be explained by analogy between the adjectival and verbal complementation system. From the Early Modern English period onwards, the *to*-infinitive stabilizes at a 3:1 ratio to the *that*-clause. For this type of clausal variation, an explanation will be proposed in terms of lexical determination and discourse factors, such as information structure.

Chapter 6 concludes the diachronic analysis by examining the constructional wholes of adjectival matrix and clausal complement. It elaborates on the distinction between mandative and propositional complements from the perspective of complementation studies and presents new insights into the development of propositional complements. A case-study of weak adjectives shows that these first occur in deontic expressions with mandative complements before they are attested in non-modal evaluative expressions with propositional complements. Moreover, some strong adjectives are marginally adopted in the propositional pattern in Present-day English, and are used in non-modal evaluative expressions as well. To explain this infrequent (apparent) crossing of a lexical boundary in the conceptual map, I

will propose two pathways of development for the propositional complements. In any case, these two pathways further substantiate the validity of the map for diachronic analysis, since its vertical axis is shown to accommodate pathways of change.

The following two chapters (7–8) take a synchronic perspective. Chapter 7 concentrates on the data and methods used in the detailed study of the Present-day English constructions, presented in chapter 8. The latter chapter offers a synchronic synthesis of the concepts discussed in the diachronic chapters. On the basis of this synthesis, it proposes a number of refinements of the categories in the conceptual map, which are similar in the cases of the two categories adjacent on the horizontal axis of map (deontic and directive meaning), but very different on the vertical axis (dynamic, deontic, non-modal evaluative meaning), cf. Figure 1. As argued above, these internal organizations of the categories of the map lend support to its internal consistency and synchronic validity. In construing this typology of extraposition constructions with modal-evaluative and directive adjectives, I also take account of the distribution of the individual adjectives across the various subtypes, which makes it possible to indicate how they split up the conceptual map among each other.

The final chapter, chapter 9, presents the overall conclusion of this book. It recapitulates the findings and hypotheses of this study that led to the conceptual map, and summarizes the evidence showing that it works both in diachrony and synchrony. In addition, it also reflects on the relative salience of the conceptual distinctions in the map. It finds that the two domains covered in this book, that of modal-evaluative meaning and that of complementation, highlight a different boundary on the vertical axis as more important. At the same time, the two domains also suggest two avenues for further research.

Chapter 1

The notion of modality

This chapter discusses the wide-ranging literature on modality, and distills the notions and categories that are useful to the present study of adjectival constructions. The literature on modality has typically focused on the category of modal verbs, with the Germanic modal auxiliaries as the prototypical cases. This bias is found both in language-specific accounts (e.g. Palmer 1979; Coates 1983; Goossens 1985; Heine 1995; Hansen 1998, 2004; Salkie, Busuttill, and Van der Auwera 2009), and in cross-linguistic studies (e.g. Palmer 1986, 2001; Bybee, Perkins, and Pagliuca 1994; Van der Auwera and Plungian 1998), although recently some scholars have taken a broader perspective, like Nuyts (2001) and Simon-Vandenberg and Aijmer (2007) on epistemic modality, and the papers in Hansen and De Haan (2009). This chapter incorporates insights into modal meanings as they emerge from the study of modal auxiliaries, but it will also apply these to constructions with open-class lexical items, especially adjectives. The assumption here is that there is a semantics of modality that is unaffected by word class.

In the literature, the term ‘modality’ has been used both in a broad and a narrow sense. In its broad sense, it refers to the whole range of tense-aspect-modality (TAM) categories (cf. Givón 1984: 269–318), or, in semantic terms, to “qualifications of states of affairs” (Nuyts 2001, 2005). This broad sense is found most often in philosophical writings (as discussed, for instance, in Perkins 1983: 6–12; Palmer 1986: 9–14), but it is also used in some linguistic accounts (e.g., Fillmore 1968; Ransom 1977, 1986; Dietrich 1992). In its narrow sense, modality refers to a specific subtype of qualificational meaning, which is complementary to the tense and aspect categories (Nuyts 2006: 1). However, according to Nuyts (2005, 2006), modality cannot simply be put on a par with the categories of tense and aspect, as it is only the latter that can be defined in coherent terms (see, e.g., Comrie 1985 and 1976 respectively). The modal categories, by contrast, have been the subject of many linguistic discussions.

This chapter will only be concerned with the category of modality in its narrow sense. I will focus on the basic categories that are typically regarded as constituting the modal domain: dynamic, deontic and epistemic meaning. Although these are the categories *traditionally* used to carve up the modal domain, their particular interpretation here, which is indebted to Nuyts’s

insights, will not be entirely traditional. As this tripartite division is not the only view on modality proposed in the literature, I will also present the most important alternative organizations of the modal domain. In addition, I will elaborate on the relations between these basic categories. The discussion of relations of a conceptual nature will refine the definitions of the three categories. The treatment of relations of a formal, diachronic and ontogenetic type will center about the modal auxiliaries, which are reputed to establish a formal tie between the three categories. It will thus become possible – in further chapters – to see to what extent their patterns of polysemy and diachronic development can be extrapolated to the adjectival constructions studied here. Apart from the basic modal categories, I will also discuss some categories that are not systematically included in the modal domain. Among these categories ‘at the modal edge’, volition and evaluation stand out as important notions here.

1.1. Dynamic – deontic – epistemic modality: The basic categories

The definition of modality crucially depends on the question which semantic categories are taken to belong to the modal domain, and how these ought to be defined. In this section, I will examine the categories commonly considered to make up the core of modal meaning, that is dynamic, deontic and epistemic (with or without evidential) meaning. I will also look at alternative ways of carving up the (core) modal domain.

1.1.1. Dynamic modality

Dynamic modality (from Greek δύναμις: ‘power’, ‘strength’) traditionally involves ascribing an ability or capacity to the subject participant of a clause. In his seminal *Essay in Modal Logic*, von Wright (1951b: 28) briefly deals with this type of modality, which he takes to refer to abilities and dispositions, as in *Jones can speak German* (note the modal auxiliary *can*).³ The term has found general acceptance and is used in, amongst others, Palmer (1979, 1983, 1986), Perkins (1983), Plank (1984), and Nuyts (2005, 2006) (see Depraetere and Reed [2006: 281–282] for a short overview of how dynamic modality is treated in the literature). Other terms for this type

3 Von Wright acknowledges his colleague philosopher G. T. Geach for the term ‘dynamic modality’ (1951b: 28).

of modal meaning are ‘facultative modality’ (De Schutter 1983: 285; Goossens 1985: 204), and ‘inherent modality’ (Hengeveld 1988: 233–234).

However, the traditional definition of dynamic modality has been felt to be too narrow. Rather, the term should apply to all indications of abilities/possibilities, or needs/necessities inherent in agents or, more generally, participants of actions (which are not necessarily syntactic subjects) or in situations (Palmer 1979: 3–4, ch. 5–6, 1990: ch. 5–6; Perkins 1983: 11–12; Nuyts 2005, 2006). The property of being inherent in a situation or in a participant is what motivates the internal consistency of the dynamic category. Consider the following example.

- (1) Some athletes are **able** to run many miles at a time but to lesser mortals a maximum of three to four miles is ideal. (CB, ukbooks)

In (1), some athletes are said to be able to run many miles at a time. As this ability is inherent in the participants (because of their physical condition), the speaker indicates the ability on the basis of grounds that are internal to (the participants in) the situation or State of Affairs (SoA). Thus, the example does not express the speaker’s attitude or personal commitment to the SoA. The same goes for example (2).

- (2) Fund-raising is vital to the continuation of Redwings and requires a great deal of effort and good-will on the part of both staff and supporters. We know of several smaller sanctuaries which **have had to** close down because of financial difficulties. (CB, ukephem)

In (2), the circumstance of financial difficulties made it necessary for the participants (i.e. some smaller sanctuaries) to close down. Here, it is the need of the participants to close down (imposed by the situation) that is indicated, again on SoA-internal grounds.

- (3) It is **possible** to crop cauliflowers over a number of months, by growing them under polythene or cloches using the varieties already mentioned. (CB, ukmags, Amateur Gardening, 17/07/1993)

In (3), the possibility of cropping cauliflowers within a few months (after July) is presented as contingent upon the use of polythene or cloches and the choice of the variety. Or, to put it differently, to reach the goal of successful early cropping, the gardener needs to make sure that the conditions of a favourable location (under polythene or cloches) and the right variety of crop are fulfilled. This paraphrase shows that the possibility of early

cropping is inherent in the SoA. Once more, therefore, the example does not involve any expression of the speaker's attitude. Rather, the possibility is indicated on SoA-internal grounds. As will be discussed in section 1.2.1, this is why Nuyts (2005) argues that dynamic modality rates as a situating category in the qualificational domain.

It should also be noted that dynamic modality is a binary category (Nuyts 2005: 16; 2006: 16). It contains only the two values of possibility and necessity, and does not involve a scale of meanings intermediate between these two values, as is the case for deontic and epistemic modality (see sections 1.1.2 and 1.1.3; see also Nuyts [2005: 33–34, note 33] on the problems of regarding dynamic modality as a scalar rather than binary category). Arguably, this binary nature is connected with the inherent character of the abilities/possibilities or needs/necessities. I will return to the two values of dynamic modality in section 1.2.1, in which this category will be contrasted with scalar categories such as deontic modality discussed below.

The three examples given above each illustrate a specific subtype of dynamic meaning as proposed in Nuyts (2005, 2006). In this study, I will adopt his subclassification of dynamic modality, which arguably goes back to his diachronic analysis of the Dutch modal *kunnen* ('can') in Van Ostaeyen and Nuyts (2004).

First, participant-inherent dynamic modality involves the ascription of abilities/capacities or needs/necessities to the first-argument participant, which is usually the agent (Nuyts 2006: 3). An example of participant-inherent ability has been given in (1) above. Example (4) illustrates a participant-inherent need.

- (4) [T]he dog began to yowl because he **had to** go pee badly and I noticed that I had missed my usual mealtime. (CB, ukbooks)

Second, participant-imposed dynamic modality indicates the abilities/capacities or needs/necessities of a participant which are “determined by the local circumstances (and which may thus be partly beyond the power and control) of that participant” (Nuyts 2006: 3). An example of participant-imposed necessity has been given in (2) above. Example (5) below involves participant-imposed inability. In (5), Scout leaders will be unable to find the young boys' equipment if these have dropped it away from the tents, because boys typically do not remember where they leave their equipment. Such negligence of the boys often escapes the control of the leaders.

- (5) The only way equipment can be left at the camp as if a boy has dropped it away from the tents, perhaps in the woodland nearby. Obviously if this does happen we will not be **able** to find it while we are at the camp, since boys don't remember where they leave equipment. (CB, ukephem)

Third, situational dynamic modality involves the indication of “a potential or a necessity/inevitability inherent in the situation described in the clause as a whole” (Nuyts 2006: 4). Such expressions thus go beyond the (first-argument) participant, and may not involve any participant at all, as in example (6). In example (3) above and (7) below, the first-argument participant is left implicit due to the syntactic construction used, i.e. the extraposition construction.

- (6) The alternative is the verdant, Atlantic-facing north, where it **can** rain although it does so pretty warmly. (CB, times)
- (7) There had followed a nightmare procession along the sewer for what felt like and doubtless was several miles. For the first part of their journey it was **necessary** to move doubled up, in a position of almost unbearable discomfort. After what seemed at least an hour but was probably ten minutes they reached mercifully, a larger, higher sewer tunnel and could move upright. (CB, ukbooks)

In (6), the potentiality of rain is inherent in the meteorological properties of Spain's northern coast, the region discussed in this excerpt.⁴ Another example of situational possibility (with an implicit participant, however) has been given in (3) above. In (7), the circumstances inherent in the situation (i.e., the small and low tunnel) make it necessary for the (implicit) participants to move doubled-up. As in the case of (3), the example can be paraphrased in terms of condition and goal: advancing in the first part of the trip is conditional upon moving doubled-up. It can be concluded that the possi-

4 The analysis of (6) as a dynamic expression is not uncontroversial. According to Palmer (1979: 152–155), this example expresses existential modality, with *can* having the meaning of ‘sometimes’, yielding ‘It sometimes rains at the northern coast of Spain’ (cf. *Lions can be dangerous*: ‘lions are sometimes dangerous’ [1979: 152–153]). Following von Wright (1951b: 1–2), however, Palmer acknowledges “a close parallelism between the existential mode involving ‘some’ and ‘all’, and the dynamic mode involving ‘possible’ and ‘necessary’” (1979: 152) (see also Plank 1984: 342).

bilities/necessities illustrated in the examples above are all based on grounds that are inherent in or internal to the SoA in question.

The three different types of dynamic modality all involve a binary distinction between abilities/possibilities and needs/necessities, but the distinction between the participant-inherent and participant-imposed subtype on the one hand, and participant-imposed and situational meaning on the other may not always be as clear-cut. Arguably, both participant-imposed and situational necessity are included in the terms ‘external necessity’ (Quirk et al. 1985: 226; Palmer 1990: 114–116), ‘circumstantial necessity’ (Declerck 1991a: 383; Huddleston and Pullum 2002: 185), ‘objective necessity’ (Coates 1983: 36), and ‘general objective necessity’ (Goossens 2000: 161) (cf. Depraetere and Verhulst 2008: 8). Nuyts acknowledges possible ambiguity within the dynamic domain (Nuyts pc). Consider the example given in (8).

- (8) We must persuade our mps to support the Bill – it’s a Private Member’s Bill, and so it is **essential** that at least 100 MPs support it, or it will get thrown out without a second reading. (CB, ukephem)

In (8), the speaker describes the need to get the support of 100 MPs in order to give the Wild Mammals (Protection) Bill a second reading. The expression clearly involves participants: at least 100 MPs. This number of supporters is needed because it is a Private Member’s Bill. Therefore, it can be argued that this number of MPs have to support the bill because of the regulations imposed by the British parliamentary system. In this sense, (8) expresses participant-imposed dynamic meaning. However, (8) can also be interpreted as a situational dynamic expression. The necessity of the 100 MP support is inherent in or imposed by the British political system, or, more generally, it is an SoA-internal necessity. In this book, dynamic meaning expressed by complement constructions with adjectival matrices is taken to be of the situational subtype, as will be explained in section 2.2.1.

1.1.2. Deontic modality

Deontic modality (from Greek τὸ δέον (sg), τὰ δέοντα (pl): ‘what is (sg)/the things that are (pl) fitting, proper, needful’) has traditionally been associated with the notions of permission and obligation. This definition goes back to the tradition of modal logic, in which obligation is characterized as “deontic necessity”, and permission as “deontic possibility” (von

Wright 1951a,⁵ 1951b: 36, 1971; Lyons 1977: 823–841; Kratzer 1978: 111; Van der Auwera and Plungian 1998: 81). Such accounts often feature examples such as (9) and (10) with the modal auxiliaries *must* and *may*.

- (9) You **must** open the door (Lyons 1977: 832 [3])
 (10) You **may** open the door (Lyons 1977: 832 [5])

In (9), the speaker imposes the obligation to open the door on the hearer by using *must*, or at least, he or she states that the hearer is “obliged (by some unspecified authority)” to do so (Lyons 1977: 832). In (10), the speaker confers permission to the hearer to open the door by using *may*, or again, he or she states that the hearer is allowed (by some unspecified authority) to do so (Van linden and Verstraete 2011: 151–152). A broader definition is found in Verstraete (2005), who takes deontic modality to express the degree of desirability of a certain SoA. In deontic utterances a modal source, typically the speaker, assesses the desirability for an agent to carry out a certain action (Verstraete 2005: 1405–1406). The term ‘agent’ here refers to “the person who is given permission or is under the obligation to do something” (2005: 1402). This definition still includes expressions in which permission is (reported to be) granted, or obligation is (reported to be) imposed.

More recent accounts of modal auxiliaries, however, have proposed a distinction between obligation and permission on the one hand, and desirability on the other hand – an idea already embryonic in Kiefer (1997).⁶ Starting from their analysis of the Dutch modals *mogen* ‘may’ and *moeten* ‘must’, for instance, Nuyts, Byloo, and Diepeveen (2005, 2010) have argued that the meaning of examples like (11) to (14) below is very different from the traditional notions of obligation and permission (see also Nuyts 2005).

5 Von Wright acknowledges his colleague philosopher C. D. Broad for the term ‘deontic modality’ (1951a: 1).

6 In his comment on Bybee, Perkins and Pagliuca’s (1994) categories of agent-oriented versus speaker-oriented modality, Kiefer (1997: 247–248) notes that speech acts such as granting a permission and imposing an obligation do not belong to the modal domain, but rather to the pragmatic domain. The notions of deontic necessity and deontic possibility, by contrast, are semantic notions. However, his treatment of the distinction between semantics and pragmatics is fairly limited. A more – independently – developed discussion is found in Nuyts, Byloo, and Diepeveen (2005, 2010).

- (11) A: And you are going to bring your poems or what?
 B: Yes, because I have such a hard time deciding what I am going to take. I have to pick out three, and they **should** relate to each other to some extent, in my opinion, and it can't be too sinister I think. (cited in Nuyts, Byloo, and Diepeveen 2005: 29 [24])⁷
- (12) Sir, It was poignant and entirely **fitting** that the nation should fall silent for one minute on Sunday to demonstrate its sympathy for Dunblane's awful loss; and how striking it was that supermarkets, stations and sports stadiums suspended their business at the time. (report 18/03/1996; 13/03/1996 a massacre took place in Dunblane, Scotland) (CB, times)
- (13) Taking such an approach was entirely necessary because of the growing extent of the problem. ... It was also **important** to raise the public awareness of the claims situation. Remember at the end of the day it is the taxpayer who foots the bill. (CB, sunnow)
- (14) There is no pre-contract available in Scotland. I have written to both the SFA and the Scottish League pointing this out. ... We also **deplore** that a person not involved in the affairs of this club gave advice to the player [i.e. Morton, AVL]. (CB, sunnow)

According to Nuyts, Byloo, and Diepeveen (2005, 2010), in these examples the (reported) speakers indicate the degree of moral desirability of particular SoAs, but they do not grant permission nor impose an obligation. The 'assessors' or modal sources commit themselves to the SoAs on the basis of moral principles. Crucially, those principles are external to the SoA under assessment. Therefore, Nuyts, Byloo, and Diepeveen (2005, 2010) classify deontic modality as an attitudinal category in the qualificational domain, as distinct from the notions of obligation and permission. They adopt a broad definition of morality, as "it need not involve societal principles, however, it can also concern strictly personal norms of the assessor" Nuyts, Byloo, and Diepeveen (2005: 8, 28, note 3).

If utterances expressing permission or obligation are excluded from the category of deontic modality, which type of meaning do they express?

7 This example is their translation of the Dutch original in (i) below, taken from the Corpus Gesproken Nederlands ('Corpus of Spoken Dutch').

- (i) A: en gij gaat dan uw gedichten meebrengen of wat?
 B: ja want ik kan zo moeilijk beslissen wat dat 'k ga nemen. ik moet er drie uitnemen en ze **moeten** een beetje verband hebben met elkaar vind ik en 't mag niet te zwartgallig zijn vind ik. (42 – fv700058)

Nuyts, Byloo, and Diepeveen (2005: 9) propose the term ‘directive’ meaning, which is an illocutionary type of meaning. In their view, the notions of permission and obligation involve “an ‘action’ plan (stimulating or [not] hindering somebody to do something),” and as such they are speech act notions (Nuyts, Byloo, and Diepeveen 2010: 18). On the relation between a directive utterance and deontic meaning, they refer to Searle’s (1969, 1976) notion of a sincerity condition of a speech act: “a deontic assessment may serve as the ‘sincerity condition’ of a directive, i.e. as the ‘mental state’ underlying the obligation or permission” (Nuyts, Byloo, and Diepeveen 2010: 18). In that case, the directive is said to be ‘inspired’ or ‘informed’ by a deontic judgement (Nuyts, Byloo, and Diepeveen 2010: 18, 24).⁸

From a cognitive perspective, there is a fundamental difference between the dimension of directivity and that of deontic meaning (Nuyts, Byloo, and Diepeveen 2010). As an attitudinal category, deontic modality belongs to the domain of qualifications of SoAs. This domain is basic to human conceptualization: qualificational categories are “central dimensions of our cognitive system for storing and handling world knowledge” (Nuyts, Byloo, and Diepeveen 2010: 32). Directivity, by contrast, is not a qualificational category, but an illocutionary notion, with a primary function in the interactional system of language. More precisely:

[I]llocutionary notions are not conceptual (in that sense) at all, they are not elements of how we know and think about the world. Rather, they are central elements of communicative behavior, i.e. of how we interact with other ‘minds’. More specifically, they encode (types of) communicative goals which speakers may pursue by means of language (and for which language offers specific means to signal them). As such, they belong in a different cognitive system, i.e. the system for planning communicative behavior. (Nuyts, Byloo, and Diepeveen 2010: 32)

Nuyts, Byloo, and Diepeveen (2005, 2010: 32) thus locate deontic modality and directivity in different ‘components’ of the processing systems: the conceptual versus illocutionary component. While this distinction may at first sight seem more relevant to philosophical debates rather than linguistic

8 Directives are not necessarily inspired by deontic assessments. As Nuyts, Byloo, and Diepeveen (2010: 24–27) convincingly show, they can also be based on “practicalities (potentials or necessities) ensuing from situations or individuals in those situations” (dynamic meanings), or on boulomaic assessments (on the notion of boulomaic modality, see sections 1.3.2 and 1.3.4). In their study, most directive expressions were indeterminate as to their type of sincerity condition.

ones, the analysis of adjectival constructions will show that there are actually good linguistic reasons to keep the two types of meaning apart, and to shift the core of deontic meaning from obligation/permission to desirability (cf. Van linden and Verstraete 2011: 152). I will also argue that the purely conceptual definition of deontic modality proposed in Nuyts, Byloo, and Diepeveen (2005, 2010) is still too broad to do justice to the data (see section 2.2.2).

1.1.3. Epistemic modality

Epistemic modality (from Greek ἐπιστήμη: ‘skill’; ‘knowledge’) involves the speaker’s (or someone else’s) estimation of an SoA in terms of likelihood. It thus expresses the degree of probability of the SoA as a whole, as assessed by a modal source. This traditional definition is fairly non-controversial (see Palmer 1979: ch. 3, 2001: 24–35; Goossens 1985: 204; Bybee, Perkins, and Pagliuca 1994: 179–180; Van der Auwera and Plungian 1998: 81; Nuyts 2006: 6). Examples are given in (15) and (16).

- (15) The evolution of marriage and divorce **probably** occurred roughly like this: about four million years ago, the vast tropical forests of east Africa began to shrink and were replaced by spreading grassy plains, so our ancestors were forced from their leafy sanctuaries... (CB, ukmags)
- (16) Detectives say they’re having difficulty tracing the last movements of a Birmingham woman battered to death at her home in a city centre tower block. Forty-one year old divorcee Norma Jordan was found was found dead in her flat in Pioneer House Castlevale on Wednesday. Police believe she **may** have known her killer. (CB, ukspok)

In (15), the speaker regards it as probable that the evolution of marriage and divorce occurred in the way he or she sketches in the ensuing discourse. In (16), the police regard it as possible that the murdered woman has known her killer. It appears that epistemic modality is a category indicating the degree of the assessor’s commitment to the SoA in terms of SoA-external – in this case: existential – grounds (Nuyts 2005: 23). Like deontic modality, it is an attitudinal category involving an attitudinal assessment grounded on SoA-external arguments. In this perspective, epistemic and deontic modality together differ from dynamic modality, which involves

SoA-internal arguments and is therefore a situating category (see also section 1.2.1 below).

More controversy exists on whether or how evidentiality is to be included within the epistemic domain. Evidential modality indicates the source of information on which the speaker draws to make a statement about the existence of the SoA (e.g. Chafe and Nichols 1986; Willet 1988; Nuyts 2001; Cornillie 2007). Chung and Timberlake (1985: 244) and Timberlake (2007: 316) use the term ‘epistemological modality’. An example is given below.

- (17) The Commander in Chief of the Bolivian Armed Forces ... has asked the government to expel members of the US Drug Enforcement Administration accused of committing abuses against military personnel and property. The abuses **allegedly** took place during a large scale operation carried out last week by anti-drugs police and DEA officials against the northern town of Santa Ana. (CB, bbc)

In (17), the adverb *allegedly* indicates that the speaker has the information on the American abuses in Bolivia from hearsay or reported evidence.⁹ Because the speaker presents this information as reported, we can infer that he or she does not want to simply assert this information as true. This conversational implicature thus illustrates why evidential expressions are sometimes included in the epistemic domain. However, a discussion of the question whether evidentiality is a type of modality on its own, or whether it should be subsumed under epistemic modality is beyond the scope of this book (I refer to Nuyts [2005: 10–12] for a short overview of the literature on this topic).

1.1.4. Alternative organizations of the modal domain

The tripartite division of the modal domain into dynamic, deontic, and epistemic, as discussed in the previous sections, is certainly not the only view on modality. Influential alternative organizations of the modal domain include (i) the two-way division between root and epistemic modality (e.g. Coates 1983; Sweetser 1990), (ii) the four-way division as proposed in Van

9 Apart from hearsay/reported evidentials, three other subtypes are generally distinguished according to the type of source of information, namely experiential/sensory, inferential, and reasoned evidentials (Palmer 2001: 35–52; Nuyts 2005: 11).

der Auwera and Plungian's (1998) semantic map, and (iii) Narrog's (2005a) definition of modality in terms of two dimensions. It will be seen that in these alternative organizations, it is the delineation between dynamic and deontic modality that is a matter of dispute, while the definition of epistemic modality is generally agreed on. Note also that in these alternative proposals, 'obligation' and 'permission' are viewed as part and parcel of the deontic domain, as they have not been relegated to the category of illocutionary/directive meaning. In the following proposals, then, the term 'deontic modality' is always used in its traditional sense, including the notions of permission and obligation.

A first alternative organization of the modal domain is found in the Anglo-American literature, which makes a basic distinction between root modality and epistemic modality. Some authors explicitly restrict root modality to deontic modality (Steele 1975; Sweetser 1990: 49; Talmy 1988: 80; Langacker 1991: 271), thus excluding dynamic meaning from the modal domain. In her analysis of the English modal auxiliaries (especially *can* [1990: 52–53] and *need* [1990: 53–54]), however, Sweetser uses the term 'root modality' more widely to cover dynamic meanings as well (and arguably, Talmy [1988: 77–80] does so too). Langacker (1991: 273), in turn, does something similar when he refers to ability as a root meaning. These last three authors all present cognitive accounts, in which the subtypes of root and epistemic modality are conceptualized in terms of force dynamics (Talmy 1981, 1988; Sweetser 1984, 1990; Langacker 1990: 336, 1991: 271; Achard 1998).¹⁰ In a sentence like *John cannot open the lock*, for example, *can*

indicates that the subject has a tendency toward the action expressed by the following verb, that some factor opposes that tendency, and that the latter is stronger, blocking the event. (Talmy 1988: 77–79)

The basic distinction between root and epistemic modality is that the first category involves psychosocial forces, whereas the second one involves 'forces' at work in reasoning processes (Talmy 1988: 80; Sweetser 1990: 58–65). In general, accounts in the force-dynamic framework take root modality to include both deontic and dynamic meanings. Anglo-American authors who explicitly do so – but do not work within the force-dynamic framework – include Hofmann (1976: 93, 1979: 3) and Coates (1983: 20–

10 Mortelmans (2007) presents a useful overview of how modality is treated in Cognitive Linguistics. She discusses the force-dynamic framework more extensively.

21). Palmer (2001) does distinguish between deontic and dynamic meaning, but he still groups them together under the supercategory ‘event modality’, as opposed to ‘propositional modality’, which includes epistemic modality and evidentiality. All in all, whereas some accounts in the root approach exclude dynamic modality from the modal domain, most accounts group dynamic and deontic modality together under the same label. Thus, these accounts put together situating modal meaning with one of the attitudinal modal categories, and oppose this blend to another attitudinal category (epistemic meaning). In section 1.2.1, I will discuss why this grouping of different categories can be considered unfortunate.

A proposal that is largely based on the root approach but also takes formal and pragmatic categories into its scope is put forward by Bybee and associates (Bybee 1985; Bybee, Perkins, and Pagliuca 1994; Bybee and Fleischman 1995). Instead of the term ‘root modality’, they propose ‘agent-oriented modality’, which they distinguish from epistemic modality – defined in the traditional way. Agent-oriented modality “reports the existence of internal and external conditions on an agent with respect to the completion of the action expressed in the main predicate” (Bybee, Perkins, and Pagliuca 1994: 177). It includes notions such as obligation, necessity, ability, desire, willingness, and root possibility (1994: 176–179). Apart from these two subtypes, Bybee, Perkins, and Pagliuca (1994) also subsume subordinating modality and speaker-oriented modality within the modal domain. The first subtype is defined as a formal category, grouping mood types that are used in subordinate clauses (1994: 180–181). The second subtype covers speech act notions such as commands, requests, warnings, exhortations and permissions. Among the grammatical categories that are used to express these notions, they list the imperative, prohibitive, optative, hortative, admonitive, and the permissive mood (1994: 179). Some authors have interpreted agent-oriented and speaker-oriented modality as two separate categories, with the enabling factor (the speaker or a participant) as dividing criterion (e.g., De Haan 2006: 31). From the directive examples given under the heading of agent-oriented modality (Bybee, Perkins, and Pagliuca 1994: 179, [11]–[12]), however, I gather that speaker-oriented modality forms an illocutionary subtype of agent-oriented modality. In any case, with the additional mood types and speech act categories, Bybee and collaborators include more in the modal domain than the other authors discussed here.

A second alternative organization, less drastic than the root approach, is found in Van der Auwera and Plungian (1998) (see also Goossens [1983, 1999] for a similar line of reasoning). In their semantic map of modality, they distinguish four types of modality: (i) participant-internal modality,

(ii) participant-external modality, (iii) deontic modality, and (iv) epistemic modality (1998: 80–81). It can readily be seen that the divergence from the traditional tripartite division concerns the distinction between dynamic and deontic modality. In Van der Auwera and Plungian’s view, a crucial factor in carving up the modal domain is attribution of possibility/necessity to the first-argument participant, as noted by Nuyts (2006: 7). In terms of the subtypes of dynamic meaning presented in section 1.1.1, participant-internal modality corresponds with the participant-inherent subtype (cf. [1]). Participant-external modality covers both the participant-imposed and the situational dynamic subtype (cf. [2] and [3]). In expressions of participant-external and deontic modality, the possibility or necessity is not ascribed to the first-argument participant, as in participant-internal expressions, but to circumstances that are external to the participant. Therefore, Van der Auwera and Plungian (1998) regard deontic modality as a specific subtype of participant-external modality, thus ending up with three basic categories:

Deontic modality identifies the enabling or compelling circumstances external to the participant as some person(s), often the speaker, and/or as some social or ethical norm(s) permitting or obliging the participant to engage in the state of affairs. (Van der Auwera and Plungian 1998: 81)

In terms of the definitions of dynamic and deontic modality provided in sections 1.1.1 and 1.1.2 above, Van der Auwera and Plungian thus conflate expressions that are grounded in SoA-external as well as SoA-internal arguments, and which may or may not involve an attitudinal source. Since the category of participant-external modality contains both dynamic and deontic expressions, it is found to be problematic in the present study. As a final note to this alternative proposal, it seems that one subcategory is excluded from the modal domain, namely situational dynamic modality without an (implied) first-argument participant (cf. [6]).

The third alternative organization of the modal domain discussed here is the one put forward by Narrog (2005a), who defines modality in terms of factuality. Narrog does not propose a clear-cut classification of modal subcategories; rather, he sees the modal domain as a two-dimensional semantic space. His model features the dimension of ‘volitivity’ and that of ‘event-orientation’ versus ‘speaker-orientation’. The starting point of his ‘volitivity’ dimension is Jespersen’s ([1924] 1992: 313–321) distinction between deontic and epistemic modality in terms of an “element of will” (see also Heine 1995: 29, 42; Palmer 2001: 8). Narrog’s (2005a) category of volitive modality – which includes subcategories involving an element of will – thus groups deontic modality and volition (see section 1.3.2). Non-volitive

modality includes subcategories not involving an element of will, in particular dynamic, epistemic and evidential modality. Hence, Narrog's (2005a) proposal deviates from the two approaches presented above, in that it does not group (parts of) dynamic and deontic meanings together, but dynamic and epistemic meaning. However, Narrog notes that "volitivity is not a strictly binary concept but one with degrees of gradience between the two poles" (2005a: 684). Evidence for its scalar nature includes the finding that modal forms may be vague between volitive and non-volitive meaning, such as *should* or *ought* in Present-day English (see Coates [1983: 16–17], who speaks of "merger"). In addition, diachronic studies have shown that the semantic development of modal auxiliaries typically involves stages of indeterminacy between volitive and non-volitive meaning. Traugott and Dasher (2002: 128), for example, argue that some Middle English uses of *must* are indeterminate between deontic and epistemic meaning.

Apart from 'volitivity', Narrog (2005a) also introduces the dimension of 'event-orientation' versus 'speaker-orientation'.

Speaker-orientation, at one end of the dimension, is directly linked to the speaker's own modal judgement at the time of speech in the given speech situation, potentially including the hearer. In contrast, in the case of event-oriented modality, the non-factuality is the result of a modal judgement expressing conditions on a participant of the described event, independent of the speaker and the present speech situation. (Narrog 2005a: 685)

This dimension forms a continuum as well, with sentence mood and illocutionary force bordering on the speaker-oriented end of modality proper (Narrog 2005a: 679). As the two dimensions are logically independent of each other, they can be represented as two axes in a two-dimensional plane, like in Figure 2.

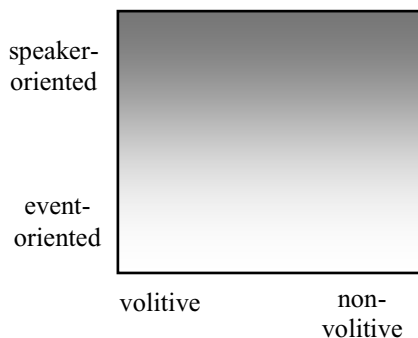


Figure 2. The two dimensions of modality (Narrog 2005a: 694, Figure 3)

Much like Palmer (2001), Van der Auwera and Plungian (1998), and Bybee and associates, Narrog (2005a) seeks to account for cross-linguistic data with his model, but he proposes a very different semantic space, and in that sense does more than offer an alternative delineation between dynamic and deontic modality. The major merits of and problems with his proposal will be dealt with in the following sections.

To conclude this section on the treatment of the basic categories of modality, I present an overview of the most important proposals discussed above in Figure 3 (see Depraetere and Reed [2006: 280] for a similar fig-

Nuyts, 2005, 2006		Palmer 2001		Coates 1983	Bybee et al. 1994	Van der Auwera and Plungian 1998		
volition		event modality		volition	volition		participant-internal	
dynamic	participant-inherent			ability	ability			
	participant-imposed			necessity; root possibility	necessity; root possibility			
	situational			?	?			
deontic		deontic		obligation; permission	ag/sp-or	obligation; permission	participant-external	
directive		permissive; commissive; obligative		obligation; permission	epistemic		deontic	
epistemic		epistemic		non-inferential	epistemic		epistemic	
evidential	inferential (reasoned)	speculative; assumptive		inferential	epistemic		epistemic	
	hearsay; experiential	deductive		epistemic				
boulomaic		evid. reported; sensory		epistemic		epistemic		

Figure 3. An overview of the modal domain and its conceptual categories as presented in the literature

ure, including the English-focused accounts of Quirk et al. 1985, and Huddleston and Pullum 2002). As Nuyts's (2005, 2006) analysis – represented in the leftmost column – is the most fine-grained, it serves as a yardstick with regard to which the other accounts are compared. Note that Narrog's (2005a) proposal is not included, as it does not involve discrete categories (see Figure 2 above). The categories that are not regarded as belonging to the modal domain by the respective authors are visualized as shaded cells. However, the lack of shaded cells in Nuyts's column doesn't mean that he sees all the categories as modal (see section 1.2.1).

1.2. Relations between the basic categories

So far, this chapter has introduced the three basic categories constituting the modal domain, namely dynamic, deontic and epistemic modality, and how these have, in various ways, been grouped together in the literature. In what follows, I will concentrate on relations between these categories. The discussion of their conceptual relations will further clarify the definitions of the three categories. The treatment of their formal, diachronic and ontogenetic relations will focus on the modal auxiliaries, which establish a formal tie between the three categories. It will thus provide us with a foundation for comparison with the adjectival constructions studied in the remainder of this book. The consideration of this underresearched category affords a fresh perspective on the modal-evaluative domain.

1.2.1. Conceptual relations

In the discussion of the basic modal categories (sections 1.1.1 to 1.1.3), deontic and epistemic modality were classified as attitudinal categories, whereas dynamic modality was characterized as a situating category.¹¹ This distinction, proposed in Nuyts (2005, 2006), hinges on a fundamental conceptual difference between the categories, i.e. whether the category involves a commitment of an attitudinal source or not. Crucially, attitudinal expressions involve an assessor's commitment on grounds external to the SoA, more specifically on moral grounds in the case of deontic expressions

11 Nuyts (2005, 2006) offers arguments to classify the inferential and reasoned subtype of evidential modality as attitudinal categories as well. In his view, boulomaic modality, which will be introduced in section 1.3.2 below, also rates as an attitudinal category.

and on knowledge in the case of epistemic expressions. Dynamic expressions, by contrast, do not involve such a commitment; abilities/possibilities or needs/necessities inherent in participants or situations are invariably based on SoA-internal grounds (cf. Halliday 1970; Verstraete 2001). Nuyts argues that the dynamic notions of ‘ability/potential’ and ‘need’ “are clearly semantically akin to notions such as ‘iterative’, ‘habitual’, or ‘generic’, in the sense that they are all concerned with the ‘appearance’ of the state of affairs in the world” (2005: 20). Therefore, he classifies dynamic modality as a subcategory of quantificational aspect, which together with the categories of time and space are concerned with “the situation of the state of affairs in the world”, thus forming the supercategory of ‘situating’ qualifications (Nuyts 2005: 23). In short, in Nuyts’s cognitive-functional view (cf. Nuyts 2001), deontic and epistemic modality are conceptually related, whereas dynamic modality has a very different conceptual make-up. This is why it is somewhat unfortunate that in various accounts of modality (e.g., Van der Auwera and Plungian 1998, the work of Bybee and colleagues, and the literature on root modality) dynamic and deontic modal meaning are conflated. For the same reason, the grouping of dynamic and epistemic meaning under the label of non-volitive modality by Narrog (2005a) is equally problematic. In this study, I will adopt the distinction between situating and attitudinal categories.

A further difference connected with the basic distinction between situating and attitudinal categories involves the unit the modal element applies to. With the attitudinal categories, the attitudinal assessment encoded by the modal element is argued to apply to the SoA as a whole (Nuyts 2005: 13). With the situating category of dynamic meaning, however, the modal element may apply to different units: in participant-inherent and participant-imposed dynamic expressions, the modal element only applies to the participant; what is being encoded is the participant’s ability or need (due to particular circumstances or not) (Nuyts 2005: 13). The same goes for situational dynamic expressions with implicit participants (as in [3] and [7] above). By contrast, in situational dynamic expressions without any (implicit) participant (as in [6] above), the modal element necessarily applies to the SoA as a whole.¹² In section 2.2.2, I will return to this issue, especially in the characterization of deontic modality.

A third conceptual difference between dynamic modality on the one hand, and deontic and epistemic modality on the other, relates to scalarity.

12 This explains why those expressions are often said to express existential or epistemic modality (cf. section 1.1.1, note 4).

In the case of attitudinal categories, the assessor (typically the speaker) can obviously estimate his or her commitment to a greater or lesser degree. The deontic domain, for instance,

may be taken to involve a gradual scale going from absolute moral necessity via the intermediate stages of (on the positive side of the scale) desirability, acceptability and (on the negative side of the scale) undesirability to absolute unacceptability. (Nuyts 2005: 9)

As appears from the quote, the attitudinal categories include a dimension of polarity in addition to that of scalarity. The situating category of dynamic modality equally includes the dimension of polarity, but it is binary in nature rather than scalar, as it contains just the two values of possibility and necessity (see section 1.1.1). Consider in this respect the following examples.

- (18) But, most carrier bags are mainly made from just one family of plastics. This means that it is **possible** to recycle them and use the material to manufacture other suitable plastic products. (CB, ukephem)
- (19) The doctor carrying out the sterilisation can keep a check on the progress of the catheter by using an endoscope. ... it can provide a live picture from inside the fallopian tubes, allowing the doctor to judge when the catheter has reached the narrowest part of the tube It is **crucial** that the blocking device ... is deposited at this point to ensure that the tubes are rendered impassable. (CB, times)

Examples (18) and (19) are dynamic examples: they respectively indicate a possibility and a necessity which are SoA-internal (the possibility arises from the chemical properties of carrier bags in [18], and the necessity originates in the physical properties of the female reproductive organs in [19]). Intuitively, there are no intermediate values between this possibility and necessity. The examples (20) to (23) below, by contrast, express deontic meaning, and involve assessments in terms of desirability to different degrees.

- (20) It is, of course, **acceptable** in our culture for teenage magazines to instruct 11-year-olds how to perform oral sex, and for 13-year-olds to be put on the Pill without parental knowledge. But this was different. Some early commentators blamed Sarah's situation on the "sexualisation" of our children and the bombardment of sleazily al-

luring child-woman images which are indeed, any fool can see loathsome. (CB, times)

Example (20) expresses the lowest degree: the speaker thinks it is acceptable for teenage magazines to include sex manuals, but the following discourse makes it clear that the speaker does not think it highly desirable.

- (21) If you had a friend who was going through similar experiences, it would be **good** to work through your emotions together. Knowing that someone else understands how you feel can be a great relief. (CB, ukspok)

In example (21), the desirability of the SoA is estimated to a higher degree than in (20), but the utterance still expresses a weak desirability: according to the speaker, it would be good to work through your emotions together, but it is not essential (this example will be used again in section 2.1).

- (22) The Elsford Newsprint Recycling Report reveals that a massive ninety-six per cent of people think it's **important** to recycle household waste but only thirteen per cent regularly recycle and over a third thirty-eight per cent admit they never do. (CB, ukspok)

Likewise, in (22) the majority of people think it is important or desirable to recycle waste, but we can also infer from the rest of the fragment that they do not think it is morally necessary. Note that here the action of recycling is not approached as a chemical question, unlike in (18).

- (23) In the absence of a promising peace process, he [i.e. George Bush, AVL] said, the violence would only continue and possibly grow. He said it was **essential** to address the political issues which lay at the core of the strife, adding that the United States hoped for the quick emergence of a new Israeli government that was capable of making decisions on the issue of peace. (CB, bbc)

Example (23), finally, expresses the highest degree of desirability: the speaker (Bush) regards it as morally essential or necessary to address the core issues of the political conflict. It can be noted here that this strongest expression assumes all the weaker assessments to apply as well: If Bush thinks the solution essential, he also thinks it acceptable, good and important. The examples thus illustrate that dynamic modality is a binary cate-

gory, whereas deontic modality is a scalar one, which allows for scalar implicatures (cf. Van der Auwera 1996; Verstraete 2005).

The binary nature of dynamic modality is generally accepted, but some accounts have extended this binary view to deontic and epistemic modality as well. Kratzer (1978) and Van der Auwera and Plungian (1998), for example, define all modal categories in terms of possibility and necessity, much in the vein of work in traditional modal logic, which equates ‘permission’ with deontic possibility and ‘obligation’ with deontic necessity. The examples above, however, have shown that deontic modality, as a conceptual (i.e., non-directive) category, is scalar. This book therefore adopts a binary view of dynamic modality and a scalar view of deontic modality.

To conclude this section, I have argued that deontic and epistemic modality are conceptually related in that they both involve the commitment of an assessor to an SoA on the basis of SoA-external grounds. Dynamic expressions, by contrast, do not involve such a commitment, but rather situate the SoA in the world. Further characteristics of the two types of categories are listed in Table 1 below. Note that the characteristics in (3) and (4) are in complementary distribution. In addition to the properties discussed above, the table includes the dimensions of subjectivity and of performativity versus descriptivity, which are intrinsically related to the presence of an attitudinal source (cf. Nuyts 2006: 18). However, as these dimensions are not central to this study, they are not discussed in more detail (for further reading, see Lyons 1977: ch. 17; Levinson 1983: ch. 5; Verstraete 2001, 2007: ch. 1).

Table 1. The characteristics of attitudinal and situating categories (cf. Nuyts 2005, 2006)

Conceptual characteristics	attitudinal	situating	
		with (implicit) participant	without implicit participant
(1) scalarity: involving degrees	+	-	-
(2) polarity: positive and negative polarity	+	+	+
(3) tied to participant agent	-	+	-
(4) applies to the SoA as a whole	+	-	+
(5) subjectivity	+	-	-
(6) performativity/descriptivity	+	-	-

More generally, this section on the conceptual relations between the basic modal categories has offered further refinements to the definition and characterization of these categories. Moreover, it has also pointed out why

the alternative organizations of the modal domain discussed in section 1.1.4 are problematic on conceptual grounds. The same grounds are invoked by Nuyts to argue that the notion of modality is “not a very fortunate one” (2005: 5). Instead, he proposes attitudinal meaning as a wider supercategory, which does not include dynamic meaning, but which is conceptually more homogeneous. Even though I assume the distinction between situating and attitudinal categories in this study, I will not go as far as to abolish the notion of modality altogether, as I think it is still useful to the description of the data studied here (see section 2.2.3).

1.2.2. Formal, diachronic and ontogenetic relations

In the literature on modality, relations between the three basic categories have not only been looked at in terms of their conceptual make-up, but also in terms of the way they are encoded. Typological studies, for instance, have found a cross-linguistic tendency to encode the notions of dynamic, deontic and epistemic modality with a specific class of grammatical elements, namely modal auxiliaries or ‘modals’ (Palmer 1986, 2001; Bybee, Perkins, and Pagliuca 1994; Van der Auwera and Plungian 1998). These verbs are often characterized by distinct formal properties, which set them apart from main verbs. In English, for example, the modal auxiliaries share the NICE-properties – with each other as well as with tense/aspect auxiliaries like *be* and *have*, i.e., they behave differently from main verbs as regards ‘negation’, ‘inversion’, ‘code’ or post-verbal ellipsis, and ‘emphatic affirmation’ (Palmer 1965: 19–27, 1974: 18–25; Huddleston 1976: 333; Huddleston and Pullum 2002: 921–102). Likewise, Heine (1995: 19) lists a number of formal features that are characteristic of the German modal auxiliaries. More importantly, cross-linguistic studies have also shown that modal auxiliaries tend to be polysemous, as they can be used to express each (or two) of the three basic categories (De Haan 2006: 33).¹³ In English, for example, the modal verb *must* can be used to express dynamic, deontic and epistemic meaning, as illustrated in examples (24) to (26) respectively.

13 I am, of course, aware of the controversy over whether different interpretations of a modal marker represent distinct meanings or uses (polysemy or vagueness) (e.g. Depraetere and Reed 2006). I believe that the theoretical status of the interpretations discussed in this study is not immediately relevant to the argument, so I leave this question aside. It will become clear, however, that in some cases the wider construction can serve to disambiguate (e.g. section 2.3).

- (24) The pills, called Viagra, were originally developed to treat men with heart problems. But doctors were stunned to discover they gave their patients erections. ... Users **must** take a pill an hour before making love. (CB, sunnow) (*dynamic*)
- (25) As an Amnesty supporter, you will recall that last year we reported on Iraqi torture methods. A baby deprived of milk to force its parents to divulge information. Innocent people having their eyes gouged out. ... We have got to make our voice louder. We **must** recruit more supporters around the world until governments realise that they can't ignore us. (CB, ukephem) (*deontic*)
- (26) "I was a consummate fool," Wolfe said. "I made every possible mistake, but Milos appeared from somewhere with a rifle and a pistol. He **must** have killed three of them." Five, he said, when he told me the story later. (CB, ukbooks) (*epistemic*)

Because of their semantic properties, the modal auxiliaries establish a formal tie between the basic modal subcategories. Therefore, many language-specific accounts of modality have focused on the formal category of modal auxiliaries (e.g., Palmer 1979; Coates 1983; Goossens 1985; Sweetser 1990; Heine 1995; Hansen 1998, 2004). The general interest in this formal category has also revealed diachronic and ontogenetic relations between the basic categories.

First, diachronic studies on the modal auxiliaries, often within the framework of grammaticalization,¹⁴ have pointed to developmental relations between the modal categories. It has been shown that the traditional deontic meanings of obligation and permission originate in dynamic meaning (Goossens 1999, 2000 on *must*; Traugott and Dasher 2002: ch. 3; Van Ostaeyen and Nuyts 2004 on Dutch *kunnen* 'can, may'; Fischer 2010b on *may/might* and *should*). More precisely, the first modal meaning auxiliaries like *must* and *can* develop is the participant-inherent subtype of dynamic modality, as in (27) (see section 1.1.1) (cf. Van linden and Verstraete 2011: 152).

14 Grammaticalization has been defined as "the change whereby lexical items and constructions come in certain linguistic contexts to serve grammatical functions, and once grammaticalized, continue to develop new grammatical functions" (Hopper and Traugott 2003: 18). Applied to modality, "the basic idea is that certain main verbs (lexical items) may over time become modal auxiliaries and these auxiliaries may in turn become affixes (mood and tense markers)" (Traugott 2006: 110).

- (27) *Wilst ðu, gif þu most, wesan usser her aldordema,*
 Will you if you able.are be.INF our army leader
leodum lareow?
 people.DAT teacher
 ‘Are you willing, if you are able, to be the leader of [our] army, [a] teacher [for] the people?’ (8th century, Genesis, 2482, as cited in Traugott and Dasher 2002: 122 [33])

In a second stage, this participant-inherent meaning is extended to a participant-imposed subtype of dynamic meaning, as in (28).

- (28) *Ich it þe þonne gehate þæt þu on Heorote most*
 I it you[.DAT] then promise that you in Heorot [able.are]
sorhleas swefan.
 anxiety-free sleep
 ‘I promise you that you will be able to sleep free from anxiety in Heorot.’ (8th century, Beowulf, 1671, as cited in Visser 1963–73: 1791, and Traugott and Dasher 2002: 122 [34])

As a third shift, deontic meaning, as in (29), develops out of this participant-imposed dynamic meaning through subjectification (Traugott 1989: 35): the main difference from dynamic modality is the presence of an attitudinal source that takes responsibility for the deontic assessment.

- (29) *we moton eow secgan eowre sawle þearfe, licige*
 we must you.DAT tell[.INF] your soul.GEN need please
eow ne licige eow
 you.DAT not pleaseyou.DAT
 ‘We must tell you about your soul’s need, whether it pleases you or not.’ (c1000 ÆCHom I, 17 [App] 182.240, as cited in Goossens 1987: 32)

As a final semantic extension within the modal domain, the auxiliaries develop epistemic meaning, which involves the speaker’s (or someone else’s) assessment of the likelihood or truth of a proposition (cf. section 1.1.3), as in (30) below.

- (30) *He that dooth good & doth not goodly ... must nedes*
 He that does good & doesnot rightly ... must without.doubt
be bade
 be.INF bad

‘Whoever does good, but does not do it with good intentions ... must necessarily be bad.’ (1385, Usk, Testament of Love [Skeat] 109, 90, as cited in Visser 1963–73: 1810, and Traugott 1989: 42 [25])

Bybee and Pagliuca (1985) and Bybee, Perkins, and Pagliuca (1994) provided cross-linguistic evidence for this diachronic relation between dynamic, deontic and epistemic modality. They also showed that modals are ultimately derived from non-modal expressions, such as verbs meaning ‘know’ or ‘arrive’ (Bybee, Perkins, and Pagliuca 1994: 188). However, as Nuyts (2006: 16) rightly notes, there are reasons to question the universality of this strictly linear pathway. Although modal auxiliaries tend to develop epistemic meanings later than deontic meanings, the former do not necessarily develop out of the latter. Often, the examples that are given as indeterminate between deontic and epistemic meaning involve a situational dynamic meaning, rather than a clear notion of obligation or permission or, more generally, desirability. Traugott and Dasher (2002), for instance, term this meaning “generalized deontic meaning” (2002: 127–128, [43]–[44]). Furthermore, Nuyts (2006: 16) refers to cases of modal auxiliaries which show “a parallel – though not necessarily temporally simultaneous – development from dynamic into deontic and from dynamic into epistemic” (Bybee 1988; Bybee, Perkins, and Pagliuca 1994 on *may*; Goossens 1999 on *must*; Nuyts 2001: 232–233; Van Ostaeyen and Nuyts 2004 on Dutch *kunnen* ‘can, may’). (Note that in his account Nuyts [2006] takes dynamic modality to include the situational subtype.) In addition, Van der Auwera and Ammann (2005) have shown in WALS that deontic/epistemic polysemies, which may be indicative of deontic-epistemic pathways, are largely restricted to Europe. In the same vein, Narrog (2005a) presents case-studies from a number of non-European languages to prove that the overarching tendency of semantic change in modals is a unidirectional change along the event-oriented/speaker-oriented dimension, rather than the traditional “from deontic/agent-oriented to epistemic”. Moreover, modal expression types other than auxiliaries adduce yet more evidence against the generality of the dynamic-deontic-epistemic pathway, as for each category many distinct sources have been noted cross-linguistically (cf. Bybee, Perkins, and Pagliuca 1994; Heine and Kuteva 2002). In any case, we can conclude that with modal auxiliaries this pathway is not universal, but that there is support for a more general development, one in which a non-modal item comes to express a dynamic meaning, and later develops from a situating category item into an attitudinal category item.

Second, studies in language acquisition have also investigated the path from dynamic via deontic to epistemic meaning (Stephany 1986, 1993; Shepherd 1993; Choi 2006). It has been shown that a more general path from agent-oriented modalities to epistemic modalities applies in ontogenesis, “particularly in the case of languages where modality is expressed by auxiliary verbs” (Choi 2006: 165). Wells’s studies (1979, 1985) have shown that the first type of modality children acquire (at least 50% of the children in the sample) is the expression of ability/inability (using *can/can’t*), at the age of two year and three months on average. The second type is the expression of intention (using *will*) around 2;6 (2 years; 6 months). By 3;3, an average child has acquired the notions of ability, permission, willingness/intention, obligation and necessity. Epistemic notions, however, start only slowly from 3;3 onwards and are not thoroughly acquired until about the age of 5 (Wells 1979). Other case-studies confirm this general development, although the average ages of acquisition may differ. Insofar as dynamic meanings come first and epistemic meanings develop later than (but not necessarily out of) deontic meanings, ontogenesis thus clearly mirrors diachrony.

The formal, diachronic and ontogenetic relations between the modal categories all apply to the grammatical category of modal auxiliaries. However, across languages modal meaning can be expressed by a number of different grammatical, lexical or constructional devices (De Haan 2006: 32–41). These devices can belong to various parts of speech, including open-class categories such as adjectives, adverbs and main verbs. Consequently, studies of these alternative expressions might shed another light on the formal, diachronic and ontogenetic relations between the modal categories. Nuyts (2001), for example, has investigated various types of expressions that are used to convey epistemic meanings. Most of the forms studied express epistemic meaning only, so they do not establish a formal tie between the three modal categories. Moreover, for most of the items the development of modal meaning is shown to differ considerably from the pathways of semantic change described for modal auxiliaries, and often it does not involve any other modal meaning (Nuyts 2005: 15). Likewise, the types of relation between the modal categories discussed in this section raise questions for the present study. This study also investigates a type of expression other than the modal auxiliaries, specifically adjectives. The formal relations established by these adjectives will be discussed in chapter 2. I will discuss their patterns of polysemy, which are, however, more restricted than those of the modal auxiliaries. In further chapters, I will point to diachronic relations between the modal notions that the adjectives studied here are found to express (see chapters 4 and 6). The question of

whether these relations also apply in ontogenesis, however, is beyond the scope of this book.

The discussion of the basic modal categories and the relations between them has mainly focused on the notion of modality from ‘within’ its semantic space. At this point, we are provided with fairly fine-tuned definitions of dynamic, deontic and epistemic meaning. In chapter 2, however, I will argue that the adjectival data call for a redefinition of deontic modality. Before I turn to the adjectives studied here and the modal notions they express, I will take a look at modality from ‘outside’ its semantic space. In the next section, I will explore the borderline categories of modality, and I will introduce some notions whose inclusion in the modal domain is controversial.

1.3. Categories at the edges of modality

There are a number of different semantic categories that are sometimes included in the modal domain. Examples of such categories are mood, volition, rational modality, evaluation, intention, disposition, evidentiality, temporal modality, causal modality, alethic modality, and existential modality. In what follows, I will single out four categories at the ‘edges’ of modality that are of interest to this study, namely the first four categories listed here.

1.3.1. Mood

The term ‘mood’ is often mentioned in the same breath as ‘modality’ (cf. Palmer 1986, 2001), and it is basically used in two different ways in the literature. In some accounts, it refers to sentence type or utterance type, such as declarative, interrogative, imperative or hortative mood. Bybee, Perkins, and Pagliuca (1994: 179) include various types of directive moods (e.g., commands, requests, warnings, exhortations) within the category of speaker-oriented modality (cf. section 1.1.4). Likewise, Palmer (2001) includes all notions expressed by specific mood types into the modal domain as well. Van der Auwera and Plungian (1998), by contrast, relegate sentence types to the illocutionary domain. In addition, mood is also used to refer to a morphological category of the verb that expresses modal meaning (e.g. Palmer 1986: 21–23, 2001: 4; Declerck 1992: 188; Frawley 1992: 386; De Haan 2006: 33–36). In this sense, it is a formal category like modal

auxiliaries, adjectives or main verbs, which speakers can choose from to encode modal meaning. In this book, ‘mood’ will be used in this last sense, more specifically to refer to the distinction between indicative and subjunctive mood. Examples are given below.

- (31) No one has wanted more from the President in recent months than a statement hold up in Congress but it was **important** that the principle be defended. (CB, ukmags)
- (32) when asked why such vital research isn’t funded by the Department of Health, she says “The Government should be doing as much as it can, but it has limited funds. I think it’s **important** that work like ours is funded by medical charities such as Birthright.” (CB, ukmags)

In example (31), the finite verb of the *that*-clause is in the subjunctive mood (*be*), whereas the finite complement in example (32) has an indicative verb (*is*) (this example will be discussed in more detail in section 8.2). In section 2.3, I will briefly discuss the distribution of the two types of mood in Present-day English. In chapter 5, it will become clear that their distribution in complements of adjectival constructions has changed dramatically in the history of English.

1.3.2. Volition

In general, volition involves the expression of wishes, desires, hopes and fears. In the literature, it is often included within dynamic modality (e.g. Palmer 1979: 4, 2001: 76–79; Hengeveld 1988: 234 [‘inherent modality’]; Goossens 1985: 204 [‘facultative modality’]). Palmer (1986), however, includes volition in deontic modality, although he regards it as “not strictly deontic” (1986: 115). Jespersen ([1924] 1992: 313–321) and Heine (1995: 29, 42), by contrast, base their very distinction between deontic (or agent-oriented) and epistemic modality on the notion of an “element of will”. In yet other accounts, volition is subsumed under the category of ‘boulomaic’ modality (from Greek βούλεσθαι ‘want’, ‘wish’) (e.g. Rescher 1968: 25; Kratzer 1978: 102; Perkins 1983: 11; Hengeveld 1988: 239; Narrog 2005a: 684). Finally, some authors exclude volition from the modal domain altogether (e.g. Van der Auwera and Plungian 1998).

The disagreement in the literature about the modal status of volition may be explained by the difficulty in pinning down its conceptual properties. Consider the following example.

- (33) Instead, he said quietly, “I keep seeing her face, Jenny. And it’s like she’s looking at me, and saying it’s my fault she’s dead I’ve seen a lot of dead faces – car wrecks, homicides – and I don’t like it, but I get used to it, it doesn’t keep me awake. But I don’t think she’ll let me sleep, you know? I **want** to sleep tonight, I don’t want to be lookin’ at her face in my dreams.” (CB, ukbooks)

Example (33) shows that the expression of volition applies to the first-argument participant, in this case the *I*-person. As can be inferred from the context, the *I*-person is physically and mentally in need of sleep because of circumstances that are internal to the situation and beyond his control. Therefore, the example bears close resemblance to participant-imposed dynamic expressions, which explains why some authors include volition in the category of dynamic modality. However, volition cannot be equated with possibility or necessity, the two values of the dynamic category. Rather, it seems to be a scalar notion, as is illustrated in example (34).

- (34) Anna Langenbach is coming to stay for a few days. She’s not been here for ages. She **wants** to see you very much. I’ve just had a letter. (CB, ukbooks)

In (34), the grading adverbial phrase *very much* indicates that the *she*-person wants to see the hearer to a high degree. Moreover, example (35) below shows that the grounds on which the expression of volition is based are not necessarily SoA-internal.

- (35) “How certain can anyone be so far after the events that the man you have in the dock is the same man who was in Treblinka or Dacchau or wherever forty five and in some cases almost fifty years ago. Isn’t there a terrible danger that some innocent old man could be dragged into court on a mis-identification that he cannot prove. ... I mean th this this this is the dilemma of this Keith isn’t it.” “Exactly.” “You you **want** justice for the victims of the holocaust and the atrocities erm but you also **want** justice for the people who are going to be put on trial.” (CB, ukspok)

In (35), the context makes it clear that the speaker draws on moral principles, which are external to the SoA (see section 1.1.2). As in this example an attitudinal source assesses the moral desirability of a situation on the basis of SoA-external grounds, it bears close resemblance to deontic expressions. A specification of the modal status of volition is beyond the

scope of this book. However, in the (re)definition of deontic modality that I will develop in sections 2.2.2 and 2.2.3, the notion of volition plays an important role.

1.3.3. Rational modality

The term ‘rational’ modality has been proposed in Palmer (1979: 151–152) to cover cases in which the speaker refers to states of affairs that he or she finds (un)acceptable, (un)rational or (un)reasonable. Palmer gives the following example and explanation.

- (36) The government **must** act. It **must** make up its mind about priorities – offices or houses, housing estates or luxury buildings. (Palmer 1979: 152; W.15.1.48-3)

The speaker is not, one would assume, in a position to give the government orders or lay any obligation on it to act. Nor is he saying that there are circumstances which force it to act. He is merely stating what he thinks is rational in the extreme – ‘It is utterly unreasonable for the government not to act’. (Palmer 1979: 152)

From the explanation I gather that this example actually fits the definition of deontic modality proposed in Nuyts, Byloo, and Diepeveen (2005, 2010). The speaker does not lay an obligation upon the government, but he or she commits him- or herself to the SoA in terms of rational principles. In this book, I will classify such expressions as deontic ones. However, Palmer also provides other examples, which have more affinity with ‘reasonableness’ or rationality in the epistemic sense. One is given below.

- (37) The reason it was quiet before 1968 was because, you **can** argue – is because the British didn’t stand up to the Northern, the Ulster Protestants. (Palmer 1979: 151; S. 2.8a.53)

As the term ‘rational’ itself may be ambiguous, I will not use it in this book. However, I included this discussion of rational modality as it is one of the first attempts to separate deontic modality from directive meaning.

1.3.4. Evaluation

Defining modality without reference to ‘evaluation’ or one of its synonyms is hardly possible. As described in section 1.2.1 above, the attitudinal categories all involve judgements, assessments, estimations, or evaluations indeed. However, they do not cover all semantic types of evaluation. In the examples below, situations are evaluated in terms of expectability (38), humorousness (39), likeability (40),¹⁵ and significance (41).

- (38) Our record of delivering consistently good returns for With Profit policyholders means that we are regularly amongst the top performers in independent surveys of With Profit policies. So. It’s hardly **surprising** that so many of these policyholders are deciding now is an excellent time to make a further With Profit investment with us. (CB, ukephem)
- (39) Brenda ... is ready to win over a new set of young fans when she releases a club version of the 1977 Odyssey hit Native New Yorker on Monday. She joked: “I think it’s **hilarious** that I’m going to be a club diva now.” (CB, sunnow)
- (40) She also played a big anti-racist festival in Amsterdam the same weekend that goose-steppers got their man on to a London council. A Nazi getting into the Houses Of Parliament is scary she says. ... It’s **horrible** that it’s happened, it makes you think of Hitler all over again. (CB, ukmags)
- (41) It might be trifle premature to talk of the UK’s innovators ... taking on the mighty components manufacturers of the Far East. But it is **significant** that there are now a number of well-established producers whose products are the first choices for many discerning cyclists. (CB, ukmags)

In the literature on evaluation there are two types of analyses of the relation between modality and other types of attitudinal meaning, such as the

15 In Nuyts (2005, 2006), attitudinal assessments in terms of likeability are regarded as expressing boulomaic modality. In his view, this category does not involve volition, but it indicates “the degree of the speaker’s (or someone else’s) liking or disliking of the state of affairs” (2006: 12). Another example is given below.

- (ii) People are coming into my offices all the time making tea and coffee. They’ve been sleeping outside and **fortunately** the weather has been pretty good so far. (CB, sunnow)

ones illustrated above. One view emphasizes the differences between these two supercategories, and is called the ‘separating approach’ by Thompson and Hunston (2000: 4). Exponents of this approach are, for instance, Halliday (1994), Martin (2000), and the contributors to Bybee and Fleischman (1995a). The other view emphasizes the similarities between the various attitudinal categories, and is labeled the ‘combining approach’ in Thompson and Hunston (2000: 5). Examples of this approach are Stubbs (1996), Lemke (1998), Georgakopoulou and Goutsos (1997), Conrad and Biber (2000), Thompson and Hunston (2000), and Timberlake (2007). Lemke’s (1998) study of resources for attitudinal meaning, for instance, arrives at seven dimensions of evaluative meaning, which he claims to be collectively comprehensive and exhaustive. The dimensions he distinguishes are those of (i) expectability/usuality, (ii) humorousness/seriousness, (iii) desirability/inclination (termed likeability here), and (iv) significance/importance, which were all illustrated above, as well as (v) warrantability/probability, (vi) normativity/appropriateness, and (vii) comprehensibility/obviousness. In keeping with the combining approach, Lemke (1998: 38) sees the categories of warrantability and usuality as extensions of epistemic modality, and those of desirability and normativity as extensions of traditional deontic modality.

In this book, I adopt the combining approach. I thus regard the attitudinal-modal categories described in section 1.2.1 and the categories proposed by Lemke (1998) as all expressing evaluative meaning. However, I will also maintain that not all evaluative categories express modal meaning, just like not all modal categories express evaluative meaning (see sections 2.2.2 and 2.2.3). In my view, the relation between modality and evaluative or attitudinal meaning can be represented as in Figure 4.

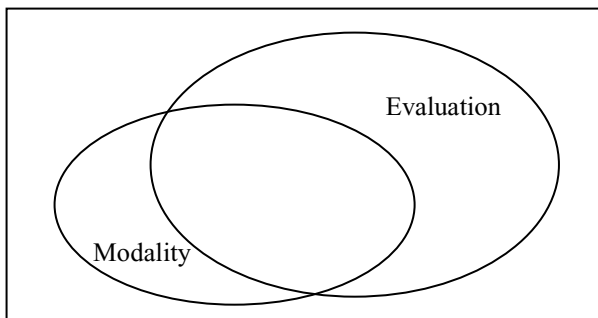


Figure 4. The relation between modality and evaluation in this study

The defining characteristics of evaluative meaning given in Thompson and Hunston (2000) are very comparable to (but less specific than) those of attitudinal categories discussed in section 1.2.1. Evaluation is conceptualized as a comparative, subjective and value-laden category. Labov (1972) already emphasized its comparative nature: every type of evaluation implies a ‘yardstick’ or norm as point of comparison. This yardstick constitutes the set of SoA-external principles at the basis of the attitudinal assessment. The property of subjectivity is obviously related to the assessor: evaluations express personal opinions. In terms of the typology of subjectivity devised by De Smet and Verstraete (2006), the type of subjective meaning intended here is one that involves the enactment of the (reported) speaker’s or assessor’s position. Evaluations are also value-laden in that they ascribe a particular value to the object of evaluation. Hunston (1985, 1989), for instance, argues that what is ‘good’ or ‘bad’ can be defined in terms of goals and their (non-)achievement. Overall, it should be noted that this conceptual definition of evaluation is not entirely free from circularity, as acknowledged by the authors (Thompson and Hunston 2000: 14). It can also be concluded that it is far more general than the definition of attitudinal meaning given in section 1.2.1 above. In any case, the notion of evaluation will prove useful in the description of the adjectival data studied here, as will be shown in section 2.2.3.

1.4. Conclusion

In this chapter I have discussed the notion of modality in three ways, and I have indicated the aspects that are of interest to this book. First, I presented the basic categories that are traditionally regarded as constituting the modal domain, namely dynamic, deontic and epistemic meaning. The first two categories will play a major role in all of the following chapters. Second, I looked at the relations between the three basic categories. The discussion of the conceptual relations further refined the definitions of the categories, and it paved the way for the discussion of the ‘marginal’ notion of evaluation. The discussion of the formal, diachronic and ontogenetic relations, in turn, focused primarily on the grammatical category of modal auxiliaries, and provided a ground for comparison with the adjectival constructions studied in all further chapters. Third, I explored the outer borders of the modal domain, and concentrated on a number of notions ‘at the modal edge’ that are important to my object of investigation: mood, volition, rational modality and evaluation. It should be noted, however, that this chapter has not focused on the notion of modality as an overarching semantic category. This

topic will be discussed in the next chapter, in which I concentrate on the adjectival data studied here and indicate that these seriously challenge the traditional understanding of deontic modality and conceptually related categories introduced above.

Chapter 2

Adjectives in the modal-evaluative domain

This chapter focuses on adjectives as one specific category that can be used to express meanings within the domain of non-epistemic modality, and shows that the analysis of such adjectival constructions as (1) and (2) considerably changes the traditional understanding of modal semantics, specifically with regard to deontic meaning and how it relates to other domains within and beyond modality. The adjectives studied here convey meanings from the positive half of the (moral) desirability scale, i.e. from *good* over *proper* to *essential* and *necessary*. The starting point is semantic, but this study also has a formal restriction. It investigates adjectives in one major type of construction, i.e. with extraposed clausal complements.¹⁶ Examples of adjectives construed with an extraposed *that*-clause and *to*-clause are given in (1) and (2) respectively. Expressions with action nominals, such as (3), are not studied in this book.

- (1) But while the future coalition governments of Italy were being secretly stitched together on Vatican territory, it was **essential** that the Germans should be made to believe in the Holy See's "scrupulous neutrality". (CB, ukbooks)
- (2) The SNP are moving ahead because we are Scotland's party and it is entirely **proper** for Scots to prefer a home-based product to Blair's Millbank mouthpieces. (CB, sunnow)
- (3) Their statement, while saying that a peaceful solution should be sought "if at all possible", did represent a warning to the Iraqis that

16 The question might be raised whether the extraposition construction itself does not determine the meaning of the adjectives. Of course, there is interaction between the meaning of the adjective and that of its matrix construction, but the semantic contribution made by the adjective seems to be the determining factor. If we take a look at nouns, which are – unlike adjectives – not restricted to predicative position, we see that a different matrix construction does not affect the basic modal meaning conveyed by the noun. In the Early Modern English expressions *There is no need of such a Judg to assure men in matters of Religion* and *Conform thy Mind to the best things and then thou shalt have no need of a Judg* (PPCEME 1640–1710), for instance, the NP *no need* (with modal noun *need*) occurs in two different types of matrix construction, but in both cases it expresses the deontic notion of absence of (moral) necessity.

a military solution might well be **necessary** if Iraq did not pull out.
(CB, bbc)

I will begin this chapter by introducing the set of adjectives investigated in this book.¹⁷ I will propose a basic lexico-semantic distinction between semantically weak and strong adjectives (like *proper* and *essential* respectively), and I will argue that this distinction correlates with a number of crucial conceptual distinctions. The adjectives are found in dynamic, deontic and evaluative constructions, and it will become clear that their distribution across these conceptual types is determined by their membership in the classes of either weak or strong adjectives. In the process, I will show that the adjectival data offer arguments in support of some of the conceptual distinctions presented in chapter 1. However, it will also become apparent that the data call for a redefinition of deontic modality and a sharper delineation between modal and evaluative meaning than has been made in the literature. In particular, I will argue that the category of deontic modality as defined by Nuyts, Byloo, and Diepeveen (2005, 2010) conflates two different types of meaning that need to be distinguished to do justice to the data, namely deontic meaning (more narrowly defined as applying to potential SoAs) and non-modal evaluative meaning (applying to presupposed SoAs). More generally, I will contend that this reassessment of deontic modality requires a definition of modality in terms of factuality status. Together with dynamic meaning, the newly distinguished types make up the range of meanings expressed by the adjectival constructions studied here. The various conceptual and lexico-semantic distinctions will be integrated into a conceptual map that covers not only adjectives, but also verbs, modal auxiliaries and the imperative mood. This map forms the backbone of this study: the corpus studies presented in the remainder of this book will each provide additional arguments for the validity of the map.

17 The adjectives (in Table 2) all are ‘descriptive’ adjectives of the ‘value’ type in terms of Dixon’s (1977) taxonomy, i.e. they describe the speaker’s evaluation of a referent (e.g. *good*, *bad*). In the examples in Dixon’s article, the value adjectives all modify nominal referents. However, if the adjectives are used to modify clausal elements, as in the case of the constructions studied here, this characterization in terms of ‘descriptors’, which are intrinsically predicative, brings up the question of performativity (the difference between performative and descriptive utterances). This issue has been dealt with briefly in section 1.2.1; a more detailed discussion is beyond the scope of this book.

2.1. The adjectives studied: Weak versus strong

To collect adjectives for this study, I consulted *Roget's Thesaurus* (Dutch and Roget 1970) and the online *Oxford English Dictionary* for the semantic domains of goodness, appropriateness, desirability, and necessity (see section 3.1). For Present-day English, the onomasiological search for lexical items yielded the set presented in Table 2 below; all adjectives express a particular meaning within the positive sphere of the deontic modal domain.

Table 2. The Present-day English dataset

weak	appropriate, convenient, desirable, expedient, fit, fitting, good, important, profitable, proper, suitable
strong	critical, crucial, essential, indispensable, necessary, needful, vital

In the table, the adjectives are divided into two semantically coherent sets, namely weak and strong adjectives. This lexico-semantic distinction can be made on intuitive grounds in the sense that strong adjectives, such as *essential* in (1), express a stronger degree of desirability than weak adjectives, such as *proper* in (2) (cf. Övergaard 1995: 85; Huddleston and Pullum 2002: 997). In this section, I will provide further arguments to distinguish between the two sets, specifically scalarity tests, modification tests, the distribution of types of matrix finite forms, and the distribution of formal types of complements other than *that*- and *to*-clauses.

In the literature on modal expressions, it has been noted that some items express a stronger meaning within a particular domain than others. The intuitive idea that adjectives like *essential* in (1) or *vital* in (4) express a stronger degree of desirability than *proper* in (2) or *appropriate* in (5) implies that these items take particular positions on a scale of desirability.

- (4) Last year's LA riots sparked off by the Rodney King affair show us just how little inner city America has improved since the long hot summers of the 60s It is **vital** that the ongoing problems of Black America are addressed positively, by the new administration and the younger generation working together. (CB, ukmags)
- (5) It provided built-in variety when the technology of TV was very different. There was no electronic news gathering equipment, live feeds or satellite links. Now the technology is in a different league and we feel it is more **appropriate** to give the task of pulling the threads together to one person. (CB, today)

Evidence for the distinction between the weak and strong adjectives studied here can be found in the felicity of scalarity tests (Karttunen and Peters 1979; Levinson 1983: 122; Hirschberg 1991). Native speaker informants judge expressions such as (6) as felicitous, with *appropriate* having a weaker meaning than *necessary*. Expressions such as (7), by contrast, are rejected, as the weaker meaning of *appropriate* clashes with the ‘and even’ coordination with the stronger form *vital*.¹⁸

- (6) It provided built-in variety when the technology of TV was very different. There was no electronic news gathering equipment, live feeds or satellite links. Now the technology is in a different league and we feel it is more **appropriate and even necessary** to give the task of pulling the threads together to one person.
- (7) *Last year’s LA riots sparked off by the Rodney King affair show us just how little inner city America has improved since the long hot summers of the 60s. It is **vital and even appropriate** that the on-going problems of Black America are addressed positively, by the new administration and the younger generation working together.

The results of these scalarity tests thus corroborate the distinction of different degrees of strength between weak and strong adjectives.

Another argument in favour of the weak-strong distinction, underlying the previous one, pertains to the characteristic of boundedness in adjectives. Paradis (2001) associates this characteristic with gradability, and shows

18 Native speaker judgements diverge, however, on similar expressions with two weak adjectives or two strong ones, such as (iii) and (iv). This means that some speakers feel there are scales within the weak and strong categories, while others do not. It also implies that the (possible) boundaries within the categories are not as clear as those between weak and strong adjectives.

- (iii) The years immediately after the Second World War were particularly scarred by the loss of many fine men who had survived the great hazards of conflict only to lose their lives at the very cutting edge of aeronautical research and development. I believe it would be wholly **appropriate and even proper** to record all their names and achievements together for posterity at some honoured place. Scattered memories inevitably fade, whilst time itself despoils once cherished graves.
- (iv) Black confidence in the integrity of the police in South Africa is at an all-time low. And now that the ruling National Party is trying to woo black support for its ambitious reform programme, it is **essential and even vital** that it tackles this thorny problem.

reflection in the type of degree modifiers adjectives combine with. Strong adjectives are conceived of as bounded: they are associated with a boundary on a schematic level. Accordingly, they combine with totality modifiers such as *absolutely* in (8) (cf. Paradis 2001: 50–53). In (8), *critical* is associated with a boundary in that it represents the ultimate point on a scale of (moral) desirability. The modifier *absolutely* reinforces its bounded interpretation.

- (8) “The most important thing is to sharpen the focus of the young generation so that they are better able to identify racism and totalitarianism in its early stages,” he said. “In the battle against this fundamental evil of the twentieth century, it is absolutely critical to mount a timely resistance.” (CB 1996, times)

Weak adjectives, by contrast, are conceived of as unbounded: they are not associated with a boundary, but represent a range on a scale. Unlike strong adjectives, they are fully gradable in that they occur in the comparative (cf. [5] above) and superlative (cf. [9] and [10]). In addition, they combine with scalar degree modifiers, such as *very* or *fairly*, as in (11) (cf. Paradis 2001: 51).¹⁹

- (9) This is perhaps one of the greatest testimonies I can give you and everyone affiliated with our Christendom College family as to the value of your support and contributions. It is most fitting that I tell you of our ‘tithing’ at this special time of year. It is June – the month of the Sacred Heart. (WB, usephem)²⁰

19 There are also examples in which weak adjectives are modified by totality modifiers, such as *completely* in (v). However, this pattern can be accounted for in terms of coercion: the adjective *appropriate* forces an unbounded interpretation onto the bounded modifier *completely*, so that this last form is (re-) interpreted as a scalar degree modifier (specifically, a ‘booster’) much like *very* (cf. Traugott 2007: 527).

(v) When two of the actors came out onstage afterward, it was somehow completely appropriate that one of them never said a word. (WB, usnews)

20 Examples marked with (WB) are taken from Collins *Wordbanks Online: English*, the successor of the COBUILD corpus. They are reproduced with the kind permission of HarperCollins Publishers.

- (10) If the guards were real guards, the worst that would happen was that he would be returned to Belisaere. If they weren't, it would be **best** to stay as far away as possible. (WB, ukbooks)
- (11) "We all have a responsibility to support our communities and to look after those, at home and abroad, who need our help most. It is very appropriate that 2001 is the International Year of the Volunteer." (WB, sunnow)

The criterion of boundedness thus shows that the sets of weak and strong adjectives differ in terms of basic schematic structure, which surfaces in their choice of degree modifiers they combine with. I will return to the gradability and boundedness of the adjectives studied here in chapter 4.

A further piece of evidence for the same lexico-semantic distinction can be found in the distribution of types of matrix finite forms, especially the form *would*. It can be noted that in constructions with strong adjectives, *would* only occurs as matrix finite form in past contexts, indicating posteriority with regard to a past time of orientation, as illustrated in (12), or in certain conditional settings, as shown in (13).

- (12) And now, in September, 1940, it was only just over a year. For the first time in that year Schwede felt hope. It would, however, be **essential** to keep up the pursuit, the pressure. (CB, ukbooks)
- (13) If, on the other hand, the Germans were successful in breaking through, it would be **necessary** for the British to counter-attack in the area where the French line had broken, mainly in order to restore French morale. (CB, ukbooks)

In constructions with weak adjectives, however, *would* is – in addition to the contexts found with strong adjectives, cf. (14) and (15) – also used in present contexts, in which its hypothetical flavour attenuates the deontic meaning of the construction as a whole. In (16), for instance, *it would be more appropriate for Brussels to follow Britain's example* is a more tentative formulation of a desired action than *it is more appropriate*. Arguably, this tentative meaning matches the meaning of weak desirability expressed by the weak adjectives, but it conflicts with the meaning of necessity conveyed by the strong adjectives.

- (14) Back at the bay we decided it would be **appropriate** to celebrate Burns' Night. Haggis and copious quantities of J&B scotch were airlifted in and in the warm, moist night we toasted the immortal memory. (CB, ukbooks)

- (15) If you had a friend who was going through similar experiences it would be **good** to work through your emotions together. (CB, uk-books)
- (16) Former Health Minister Virginia Bottomley said: “It’s no business of Brussels to instruct Britain, which has already done so well. It would be more **appropriate** for Brussels to follow Britain’s example as we have seen a dramatic fall in drink-related accidents.” (CB, sunnow)

Finally, weak and strong adjectives differ in the formal types of complements they can take. Whereas both lexico-semantic classes pattern with extraposed *that*- and *to*-clauses, weak adjectives manifest a more varied range of types of clausal complements. Unlike strong adjectives, they are found with *if*-clauses and gerundial complements, as shown in (17) and (18) respectively.

- (17) Nor is she [i.e. Shirley Brasher, AVL] interested in excuses. “I’d much rather the jockey came in and said ‘she’s just not good enough’ than try to pretend. As a tennis player, I can understand that because there were days when I just wasn’t good enough.” It would be **appropriate** if Debutante Days was good enough. She was the first horse Brasher bought solo ... (CB, times)

The occurrence of *if*-clauses can be related to the use of *would* in the matrix clause in present contexts, which is, as mentioned above, restricted to weak adjectives as well. Adjectives pattern with *if*-clauses only if the matrix finite form has a hypothetical meaning, such as *would* in (17). In such constructions, Noonan (2007: 115) notes, *if*-clauses are used to cancel the positive implications associated with the matrices. Thus, whereas in the expression *it is appropriate that Debutante Days is good enough* the SoA referred to in the complement is presupposed to be true (see section 2.2.2), the construction with an *if*-clause in (17) cancels this “factive” interpretation (Noonan 2007: 115, cf. Huddleston and Pullum 2002: 1254).

- (18) Erm we’ve both been married before so we went to our local Methodist church and he agreed to marry us but he said I don’t think it’s **suitable** walking down in clown outfits <tc text=laughter> because half of your congregation’ll probably have heart failure. (CB, ukspok)

In addition to the distribution of *if*-clauses, weak and strong adjectives also differ in the occurrence of gerundial complements. The gerund in (18) is an activity nominalization (cf. Noonan 2007: 118), referring to a kind of activity, but not to a specific event that is part of the background to the discourse. Such nominalizations can complement, for instance, emotive verbs such as *like* or *hate* (cf. De Smet 2008: ch. 9), or evaluative expressions such as *be fun*, e.g. *walking down in clown outfit is fun* (cf. Noonan 2007: 118 [296b]). Arguably, the (infrequent) occurrence of gerunds with weak adjectives can be explained by the semantic similarity between non-modal evaluative expressions such as *be fun* and weak adjectival matrices, just like the non-occurrence of gerundial complements with strong adjectives can be explained by the semantic contrast between those evaluative expressions and the notion of necessity.

In conclusion, this section has discussed arguments to distinguish between semantically weak and strong adjectives. The main value of this lexico-semantic distinction lies in its interaction with the conceptual distinctions at work in the adjectival constructions studied here. In the following sections, it will become clear that the two sets of adjectives show different patterns of polysemy; it is the pattern of the weak adjectives that has so far gone unnoticed in the modal-evaluative literature.

2.2. Constructions with adjectives: Conceptual types

This section discusses the three conceptual types of construction in which the adjectives occur, specifically dynamic, deontic and evaluative ones, and it relates these to a number of concepts, definitions and distinctions introduced in chapter 1. The adjectival constructions show that the three-way division of the dynamic domain, on the one hand, and the distinction between deontic and directive meaning, on the other, are useful to their description. More interestingly, they also require us to revisit the concept of deontic modality as defined in Nuyts, Byloo, and Diepeveen (2005, 2010). It will become clear that this reconsideration implies a definition of modality in terms of factuality.

2.2.1. Adjectives and dynamic modality

The type of meaning traditionally associated with dynamic modality is that of ability or capacity (cf. section 1.1.1). Adjectives that express this type of meaning are, for example, *able* and *capable*. In this perspective, the adject-

tives listed in Table 2 can hardly be said to express this participant-inherent type of dynamic meaning. However, Nuyts (2005, 2006) also proposes two other types of dynamic meaning, namely participant-imposed and situational dynamic modality. Especially the last type is of interest here, as some of the constructions with the modal-evaluative adjectives express this type of meaning. Examples are given in (19) and (20).

- (19) SPRINT: A mass start to race around the whole chain of the Bitches Rocks. It will be **critical** to get the outward line right to avoid the jagged rocks downstream. (CB, ukephem)

In (19), getting the outward line right is necessary in order to avoid the jagged rocks in a kayak sprint race. Crucially, the necessity in this condition-goal paraphrase is indicated on the basis of SoA-internal grounds. The compelling circumstances (i.e., the presence of jagged rocks downstream) are inherent in the situation, and clearly beyond the control of the participant, who is left implicit in this example.

- (20) They [salsify and scorzonera, AVL] are a bit of trouble to grow, especially in clayey or stony soils in which case it may be **necessary** to make a conical hole which you can fill with fine compost for them to grow in. (CB, ukbooks)

In (20), the necessity of making a conical hole derives from the nature of the two vegetables talked about, which is beyond the participant's control as well. Although the participant (a generic *you*, in this case an amateur gardener) is explicitly mentioned in the example (in the relative clause), I regard such examples as expressing situational rather than participant-imposed dynamic meaning. The distinction between these two types is not a hard-and-fast one, and it depends on the extent to which the participant still has control over the situation (Nuyts pc). However, the extraposition construction with impersonal *it* as anticipatory subject in both examples suggests that the control of the (implicit) participants is rather small (Nuyts pc). The adjectival data thus confirm the conceptual need to distinguish the category of situational dynamic meaning, in addition to the less controversial participant-inherent and participant-imposed subtype.

The data also suggest that the potential for adjectives to express (situational) dynamic meaning is lexico-semantically determined. This lexico-semantic conditioning derives from the binary nature of the category of dynamic meaning (see sections 1.1.1 and 1.2.1). Specifically, only adjectives that can be paraphrased with 'possible' or 'necessary', the two values

in this modal domain, can be used to express dynamic meaning. There are quite a few adjectives in the set which have a component of necessity to their lexical meaning, namely *critical*, *crucial*, *essential*, *indispensable*, *necessary*, *needful* and *vital*. These are the strong adjectives. The other adjectives in the set have a weak meaning. The following pair of examples contains weak *appropriate* and *possible*.

- (21) Did Shakespeare's King Lear or Macbeth lead to serial killing in their day? ... Is Bosnia a result of video nasties? Perhaps it would be more **appropriate** to address, for example, the withering structures of education and social services in our society. As Neil observes serial killers are not born, but made. (CB, times)
- (22) No one would question that the draft is a vastly more liberal document than its predecessor and that it meets many of the demands of the republics. Indeed, ... it might even ... provide the basis for effective government. It might then become **possible** to address the country's appallingly complex economic crisis. (CB, bbc)

In both examples, the modal element applies to the solution of a problematic situation. However, the two adjectives express a different modal notion. In (21), the speaker tentatively expresses his or her moral commitment to a solution for the problem: it would be appropriate or morally desirable to address the withering structures of education and social services. In this sense, the example expresses deontic modality rather than SoA-internal possibility. In (22), by contrast, the speaker regards the solution of the economic crisis as contingent on the establishment of an effective government, which is in turn contingent on agreement on the treaty. In this sense, the possibility of addressing the crisis is indicated on the basis of SoA-internal arguments. These examples thus show that the meaning expressed by weak adjectives such as *appropriate* cannot be equated with the notion of situational possibility (let alone necessity). In fact, the data do not include dynamic expressions involving weak adjectival matrices. Thus, we can conclude that the lexico-semantic distinction between weak and strong adjectives correlates with the potential for the adjectives to express (situational) dynamic meaning.

2.2.2. Adjectives and deontic modality

The traditional definition of deontic modality in terms of permission and obligation has been questioned seriously by Nuyts, Byloo, and Diepeveen

(2005, 2010). Their main argument is that it fails to distinguish between a deontic attitudinal assessment based on moral grounds, which is conceptual in nature, and an action plan inspired by this assessment, which is illocutionary in nature (cf. section 1.1.2). They propose a purely qualificational definition of deontic modality, as “an indication of the degree of moral desirability of the state of affairs expressed in the utterance, typically, but not necessarily, on behalf of the speaker” (Nuyts 2006: 4). The adjectival constructions studied here back up this distinction between conceptual deontic and illocutionary directive meaning. Consider the following examples.

- (23) While Taylor was in Rome solid news arrived in Washington about the killing of the Jews in the Warsaw ghetto. Relayed to the Vatican, this reinforced Taylor’s argument that it was now **necessary** for the Pope again to denounce the inhuman treatment of refugees, and above all the Jews, in the occupied countries. (CB, ukbooks)
- (24) He said: “Children as young as five need to understand the consequences that drugs have. It’s **crucial** we get to them before the drug dealers do.” (CB, sunnow)

In (23), Taylor thinks it is highly desirable that the pope denounces the inhuman treatment of refugees in the occupied countries (during WW II). In (24), the speaker thinks it highly important to warn children of the perils of drugs before they are contacted by drug dealers. Both examples express an attitudinal judgement of desirability on the part of the (reported) speaker, but they do not encode the illocutionary meaning of obligation.

- (25) [I]t is **compulsory** to carry a warning triangle when driving in all European countries and a fire extinguisher in Belgium, Bulgaria, Germany, Greece and Portugal. (CB, ukephem)

By contrast, example (25) with *compulsory* does encode (descriptive) directive meaning: the speaker reports on the existence of the obligation carry a warning triangle when driving through Europe, but does not necessarily assess this as desirable. Such examples bear out the need to dissociate conceptual deontic meaning from illocutionary directive meaning as proposed by Nuyts, Byloo, and Diepeveen (2005, 2010), since these two types of meaning correlate with different sets of adjectives. Still, the data suggest that deontic and directive meaning are not unrelated (cf. Van linden and Verstraete 2011: 153). One reason is that the hearer may pragmatically infer a directive meaning from a deontic expression as a preferred interpretation (Levinson 2000), but this remains a cancellable implicature: the

speaker of (24) may say “I just said it is crucial to get to children before the drug dealers do, I did not tell you to take steps yet”. Another reason is that speakers may aim to perform a directive speech act, but opt for a deontic expression to minimize the ‘face work’ (Brown and Levinson 1987). Deontic expressions can thus be used as a polite alternative for a directive (cf. Nuyts, Byloo, and Diepeveen 2005: 48).

Even though the adjectival data support the distinction between deontic and directive meaning as put forward in the work of Nuyts, they also indicate that this new definition of deontic modality is not unproblematic. In fact, it is far too broad in that it does not factor in the factuality status of the SoA under assessment. Expressions of permission and obligation, which are deontic in the traditional definition, invariably involve potential or tenseless SoAs, which are by default realized in the future (cf. Bolinger 1967b: 356–359; Coates 1983: 223; Palmer 2001: 8; Verstraete 2007: 42–46). Nuyts (2005: 23), however, argues that deontic attitudinal expressions involve the estimation of “the degree of moral commitment of the speaker to a *real* or *possible* state of affairs [emphasis mine]” and thus supposes that deontic modality applies to both factual and potential SoAs. In his view, the expressions in (26) to (28) would all convey deontic meaning.

- (26) So, before planting, it is **important** to loosen the soil to a depth of 3 or 4 inches (7.5–10cm) and then firm the cloves in from the top when you are planting them. (CB, ukbooks)

In (26), the SoA that is assessed as important (i.e. loosening the soil to a certain depth) is potential at the time of speaking. The expression serves as a general guideline in planting garlic, and the SoA referred to in the *to*-clause has not been actualized yet (nor does the context give indications as to whether it will be actualized or not).

- (27) This book presents a balanced and sensible self-help programme for bulimia. It is particularly **important** that it is written by a woman, since nearly a[ll] those with bulimia are women, and that it is written by someone who has experienced the syndrome herself. (CB, ukbooks)

In (27), by contrast, the context suggests that the SoA assessed as important (i.e. the writing of the book by a woman) has already been actualized at the moment of speech.

- (28) It is going to be fascinating next season with the two big guns, Arsenal and United, head-to-head at the top of the Premiership and in the European Cup. It can only be **good** for English football that so much quality will be on view in the Champions League, which rival managers Arsene Wenger and Alex Ferguson will be desperate to win. (CB, sunnow)

In (28), the SoA that is assessed as good (i.e. the participation of Arsenal and Manchester United in the Champions League) has not been actualized at the moment of deontic assessment (in this case, the moment of speech), but at that same moment, it is certain that these two clubs will compete in the Champions League. Therefore, we can conclude that deontic expressions as defined by Nuyts (2005) can be divided into two types on the basis of the factuality status of the SoAs under deontic assessment. The SoA can be either potential (as in [26]), or presupposed to be true (already actualized in [27], or bound to be actualized in [28]).

The distinction between attitudinal constructions with potential SoAs and those with presupposed SoAs is similar to McGregor's (1997) distinction between desiderative and evaluative attitudinal modification. Desiderative modification presents "the speaker's desire that a situation occur" (1997: 222). In this sense, it involves the speaker's stance on a situation that has not yet been actualized. Evaluative modification presents "the speaker's assessment of a situation in terms of their emotional response to it; it concerns something which has happened in the past or is presently happening" (1997: 221). In both types of attitudinal modification, "the unmarked temporal reference point is the speech situation", but McGregor explicitly notes that it is also possible

to choose a different one and represent a situation in the past as desirable as of a previous reference point, or express an emotional response to a situation in the future, viewing it from the perspective of a time subsequent to its occurrence. (McGregor 1997: 221)

In this perspective, desiderative modification corresponds to constructions with potential SoAs, and evaluative modification corresponds to constructions with presupposed SoAs.

The difference in factuality status of the SoA under deontic assessment can be associated with the relevance of the question of the SoA's likelihood or truth-value (cf. Verstraete 2007: 146–147). For expressions with potential SoAs such as (26), for instance, the question of whether it is true that someone loosens the soil to a certain depth is not discursively relevant. Re-

actions of the hearer such as “I did not know you loosen the soil to a depth of 3 or 4 inches when you plant garlic” would count as non-cooperative turns, as the speaker has merely assessed the desirability of the SoA. For expressions with presupposed SoAs such as (27) and (28), by contrast, the question of the SoA’s likelihood is relevant. In reaction to (27), for example, the hearer might interrupt with “I did not know this book is written by a woman” without uttering an uncalled-for statement. Interestingly, the difference in relevance of the question of likelihood correlates with the presence or absence of the deictic category of tense (cf. Verstraete [2007: 42–46] on the difference between deontic-directive and epistemic expressions).²¹ Deontic constructions such as (26) resemble directive expressions in that the modal position operates over potential or virtual SoAs, which are tenseless. In constructions such as (27) and (28), by contrast, the attitudinal assessment applies to tensed SoAs. Evidence for this distinction between tenseless and tensed SoAs includes the difference in the functional value of perfect forms. Consider the following examples.

- (29) You must start taking your tablets one week before you reach the malarious area, continue during your stay there, and for at least four weeks after leaving the area. It is **important** that these steps are followed carefully and that you take your tablets exactly as directed by your pharmacist. (CB, ukephem)

In (29), the present tense marked on the complement finite forms *are* and *take* does not locate the realization of the SoAs relative to the temporal zero-point (e.g. as simultaneous with it). Instead, the context suggests that the SoAs represented in the *that*-clause are virtual or tenseless, much like those represented by the *to*-clause in (26) above: when you travel to malarious areas, it is desirable to follow these steps carefully.

- (30) What time of day should I do the test? There is no special time to test, but once you have picked a time you should stick to it. This will give you a balanced view of your menstrual cycle. It is **important** that you have not passed urine for at least 4 hours before testing. Using your first urine of the day may be best. (CB, ukephem)

21 Tense is a deictic category in that it is used to locate the SoA referred to in the clause relative to its temporal zero-point, i.e. the here-and-now of the speech event shared by speaker and hearer (cf. Declerck 1991b: 14–16).

Crucially, the same goes for the perfect form *have passed* in example (30). This form does not locate the SoA differently relative to the temporal zero-point than the present forms in (29). The SoAs of (non-)urinating and testing are virtual or tenseless, and the perfect form merely indicates that the action of urinating is desired not to take place relative to some other reference point, i.e. at least 4 hours before the moment of testing. The observation that the present-perfect contrast does not imply a difference in the temporal location of the dependent SoAs in (29) and (30) confirms that these are tenseless SoAs. This is especially clear if we compare it with the value of the present-perfect contrast in presupposed SoAs, cf. (31) and (32).

- (31) Younger voters may well back Alessandra for different reasons. “There is a good chance she will win but not because her name is Mussolini” says one local journalist. “It is more **important** that she is an actress. Young people think actresses will run the country better than politicians.” (CB, today)
- (32) A spokeswoman added that Mr Dorrell had “listened carefully” to gps over their out-of-hours work dispute. But she warned him the BMA expected action, not words. The mental health charity SANE said: “It is **important** Mr Dorrell has identified community care as a top priority for improvement.” (CB, today)

In (31), the present tense form *is* locates the SoA of being an actress as simultaneous with the temporal zero-point. The context suggests that at the moment of speech, Alessandra Mussolini is an actress. Likewise, the perfect form *has identified* in (32) locates its SoA relative to the temporal zero-point, though as anterior to the here-and-now of the speech event rather than simultaneous with it. At the moment of assessment, Mr Dorrell has already identified community care as a top priority for improvement. Unlike with (29) and (30), the present-perfect contrast thus forms a deictic contrast, with present and perfect locating the SoAs as simultaneous with (in [31]) and anterior to the temporal zero-point (in [32]) (cf. Verstraete 2007: 42–46). This observation bears out that the dependent SoAs in the last two examples are tensed. More generally, the examples in (29) to (32) have shown that the difference between potential and presupposed SoAs can be restated as one between tenseless and tensed SoAs. Even though the notion

of presupposition is not uncontroversial,²² I will use the term ‘presupposed’ SoA as opposed to ‘potential’ SoA in this book.

The difference in factuality status – or that between potential and presupposed SoAs – in deontic expressions also implies a difference in the semantics of the clausal complement and the adjectival matrix (cf. Van linden and Davidse 2009: 178–180; Van linden and Verstraete 2011: 154). In fact, only potential SoAs, as in (26), (29) and (30), can be regarded as morally desirable in the true sense of the word, as these SoAs have not yet been actualized. Deontic constructions involving a potential SoA have a volitional flavour: the assessor wants the SoA to be actualized (on the basis of moral arguments) (cf. Kiefer 1997: 242; McGregor 1997: 222). There are indications that this volitional flavour is encoded, rather than implicated, as, for instance, the expressions in (23), (24), (26), (29) and (30) cannot be continued with ‘but I do/did not want this to happen’ without being semantically infelicitous. The factuality status thus forces a deontic/volitional meaning onto the adjectival matrix. Therefore, complements containing a potential SoA will be termed ‘mandative’ complements (cf. Wierzbicka 1988: 133–134 on verbal complementation; Huddleston and Pullum 2002: 996). By contrast, complement constructions with presupposed SoAs lack this volitional flavour. Clearly, it makes little sense to desire the actualization of an SoA that has already been actualized (temporal relation of anteriority, as in [32]), is being actualized (temporal relation of simultaneity, as in [31]), or is bound to be actualized (temporal relation of posteriority, as in [28]). Therefore, speakers cannot assess such SoAs as desirable, but they can only evaluate them as, for instance, good (as in [28]), fitting or important (as in [31] and [32]). Note that with presupposed complements, *important* typically means ‘significant’, as for instance in (32) (cf. Lemke 1998: 36–37). All of this shows that the factuality status of the SoA under assessment again forces a meaning onto the adjectival matrix, in this case an evaluative meaning. Since the complements containing a presupposed SoA are propositions to which the evaluation encoded by the adjectival matrix applies as a whole, these will be termed ‘propositional’ complements (cf. Van linden and Davidse 2009: 173).

Moreover, the factuality status of the SoA under deontic assessment also correlates with the lexico-semantic distinction between weak and strong adjectives. The data show that weak adjectives can be used in constructions

22 The notion of presupposition has often been related to factivity, cf. Kiparsky and Kiparsky 1971, Kempson 1975, Wilson 1975, Karttunen and Peters 1977, and Horn 1996.

with mandative complements (containing a potential SoA as in [24], [26], [29] and [30]) as well as in those with propositional ones (containing a presupposed SoA as in [27], [28], [31] and [32]). Strong adjectives, by contrast, are restricted to constructions with mandative complements, as in (23). Thus, the potential for the adjectives to combine with potential or presupposed SoAs is lexico-semantically determined.

Based on these observations, I argue, against Nuyts, Byloo, and Diepeveen (2005, 2010), that the difference in factuality status of the SoA, its influence on the adjectival matrix and the distributional evidence discussed above call for a distinction between two types of conceptual meaning, much in the vein of McGregor’s (1997) distinction between desiderative and evaluative attitudinal modification. Whereas Nuyts, Byloo, and Diepeveen (2005) would regard all examples (23), (24) and (26) to (32) as deontic, as they all involve commitments to either possible or actual SoAs, I propose to distinguish between two types of meaning. In order to see how this distinction should be made, I present the conceptual properties of the two types in relation to those of attitudinal-deontic and directive meaning as defined in the work of Nuyts in Table 3 below. (Note that the characteristics in (3) and (4) are in complementary distribution, cf. Table 1 in section 1.2.1.)

Table 3. The conceptual properties of constructions with a potential SoA and a presupposed SoA compared to those of attitudinal and directive meaning

Conceptual properties	attitudinal	directive	construction with potential SoA	construction with presupposed SoA
(1) scalarity	+	-	+	+
(2) polarity	+	+	+	+
(3) tied to participant agent	-	+	+	-
(4) applies to the SoA as a whole	+	-	-	+
(5) subjectivity	+	+	+	+
(6) performativity/descriptivity	+	+	+	+
(7) tenseless (-) or tensed (+)	-/+ ²³	-	-	+

23 The value -/+ indicates the problems with Nuyts’s (2005) claims that on the one hand attitudinal assessments apply to the SoA as a whole (i.e. a propositional content), whereas on the other deontic assessments apply to real or possible SoAs. Of course, propositions can express possibilities (e.g. epistemically modalized propositions), but the possible SoAs he refers to are in fact tenseless SoAs like the examples in (27) and (28), e.g. Nuyts (2006: 5 [7a]).

As can be seen in the table, the adjectival constructions share characteristics with both attitudinal and directive meaning. Constructions with a presupposed SoA can be truly characterized as attitudinal in nature. Constructions with a potential SoA, however, have more properties in common with directive meaning than with attitudinal meaning. Both categories express the desirability of SoAs that are potential, and they are both tied to the participant agent, who is wanted or expected to carry out the action of the complement or imperative. Clearly, this last property derives from the volitional character of both categories. If you want an SoA to be realized, you always imply that a certain agent should accomplish this (cf. Halliday 1970: 347–350; Davies 1979: 81–104; Verstraete 2005: 1402, 2007: 36). Constructions with a presupposed SoA, by contrast, do not involve a volitional flavour, and are not tied to a participant agent. They evaluate a propositional content, and therefore apply to the SoA as a whole. Table 3 thus shows that constructions with a potential SoA share more properties with directive expressions than with attitudinal ones. However, as the adjectives studied here never encode obligation, but can merely implicate it conversationally, it is not desirable to classify the expressions with potential SoAs as directive utterances, which implies they would no longer belong to the modal/attitudinal realm in Nuyts's view. An alternative solution might lie in the extension of the deontic category to cases where the moral assessment applies to an agent participant who is expected to carry out the SoA, rather than to the SoA (proposition) as a whole. This would lead to both types of expressions belonging to the same category, which is the case in Nuyts's (2005) view, since he does not think constructions with potential SoAs to be tied to the agent participant in spite of their volitional flavour (cf. [26] to [28], see also section 1.2.1). However, this solution would not do justice to the data, for the reasons discussed above. A third solution, the one I propose in this book, is presented in the next section.

2.2.3. A reassessment of (deontic) modality

The conceptual distinction between constructions with a potential SoA and those with a presupposed SoA put forward here involves a reassessment of the definition of deontic modality (cf. Van linden and Verstraete 2011: 154). More specifically, I propose a delineation of deontic modality that covers expressions with a potential SoA, but excludes expressions with a presupposed SoA. Stated differently, in my view, deontic modality involves the assessment of the degree of desirability of a virtual or tenseless SoA, whose realization is by default in the future, by some attitudinal source.

This means that, compared to Nuyts's (2005: 23) definition, deontic modality is trimmed down to its traditional definition to some degree in that – like the concepts of obligation and permission – it is limited to potential SoAs. The crucial point, however, is that I stick to the distinction between deontic and directive meaning: deontic expressions never encode the directive notions of obligation or permission. In addition, I propose to relegate the expressions with a presupposed SoA to the realm of evaluative meaning as described in section 1.3.4, on a par with expressions in which the (speaker's) assessment also applies to a propositional content, like in (33) to (35).

- (33) When I think that I have now known Stuart for three years, met his parents, sister, social workers, ... and studied and thought as hard as I can about his life, ... it seems **astonishing** that there have been only a handful of occasions when I have had a genuine sense of what it is be like to be Stuart. (WB, brbooks)
- (34) It is clearly **ironic** that ministers have jeopardised the very feel-good factor they so desperately seek, through their own deliberate efforts. The latest retail figures will only enhance a certain bleakness of outlook. (WB, times)
- (35) It is **understandable** that after the assassination of John F Kennedy, the shooting of Ronald Reagan – and the Brighton bombing – that security chiefs are paranoid. But it is **preposterous** that the White House needs a small army of 900 troops, police, CIA and officials, ... to support one man. (WB, sunnow)

All these examples involve attitudinal or evaluative judgements and contain propositional complements with presupposed SoAs (or, tensed SoAs, for which the present-perfect contrast holds as a deictic contrast). In the remainder of this section, I will argue that (evaluative) deontic expressions with a potential SoA are modal in nature, whereas (evaluative) expressions with a presupposed SoA such as examples (27), (28), and (33) to (35) above are non-modal.

The distinction between modality and evaluation, I propose, can best be cast in terms of factuality. In the literature, the overarching notion of modality has often been defined as the expression of realis versus irrealis or factuality distinctions (e.g. Chung and Timberlake 1985; Frawley 1992; Givón 1995; Mithun 1999; Palmer 2001; Narrog 2005a, 2005b). Narrog (2005b: 168, 181) further cites Palmer (1998), Dietrich (1992) for German, Papafragou (2000), and Nomura (2003) for Japanese. Earlier, Lyons (1977:

794–809) also related modality to non-factivity,²⁴ but at the same time he considered the expression of the speaker's attitude as its most important semantic feature. Later proposals in which the notion of factuality is regarded as secondary to the expression of the speaker's attitude include Kiefer (1987, 1997), Palmer (1986) and Abraham (1998). Narrog (2005b), however, offers good arguments to define modality solely in terms of factuality, without reference to speakers' attitudes at all. On the basis of the adjectival data, I adopt his definition:

Modality is a linguistic category referring to the factual status of a state of affairs. The expression of a state of affairs is modalized if it is marked for being undetermined with respect to its factual status, i.e. is neither positively nor negatively factual. (Narrog 2005b: 184)

In what follows, however, I will use the term 'factuality status' as a general term, covering both 'non-factual status' (i.e. undetermined with respect to its factuality status) and 'factual status' (i.e. determined with respect to its factuality status; positively or negatively factual). According to Narrog's (2005b) definition, modality includes dynamic, epistemic, and evidential meaning. It also covers deontic meaning, but only when the deontic assessment applies to a potential SoA (i.e. one that is undetermined with regard to its factuality status). Examples of modal and non-modal expressions are given below; their subtype is indicated between brackets.

- (36) But teams will be sent round Britain to target landlords elsewhere. They **will be able** to break into properties to check claimants live there, and dock cash from landlords caught fiddling. (CB, sunnow) (*modal; dynamic*)
- (37) I'm an internationalist. I really do believe that we **must** break down barriers, everyone must be treated the same. On the other hand, we must tell our people where it's coming from. (CB, ukmags) (*modal; deontic*)
- (38) We've got to take a commercial break here. They've been waving at me for the last few minutes. I think we've **probably** broken every rule, because it's almost – anyway, let's take a commercial break now, can we? (CB, ukbooks) (*modal; epistemic*)
- (39) When her builder rang at 8.20pm, there was no reply. In this time an intruder almost certainly a man **must have** broken through the

24 Palmer (1986: 17–18) lists a number of arguments to reject the term 'factivity', and he proposes 'factuality' instead.

- side patio doors and attacked her in her bedroom, where masking tape was found. (CB, times) (*modal; evidential*)
- (40) Splitting up with him **didn't break** my heart but I really don't know how women cope with having the man they've had children with ... go off with someone else. (CB, ukmags) (*non-modal; negatively factual*)
- (41) Unfortunately, ... the remaining Nephilim ... have acquired an utterly inexcusable vocalist who obviously owns far more Pearl Jam and Four Horsemen records than he does goth ones. Hence, this record **breaks** new ground in rawk silliness. (CB, ukmags) (*non-modal; positively factual*)

The modal expressions above all contain SoAs which are undetermined with respect to their factuality status, i.e. they are non-factual. In general, dynamic expressions merely indicate abilities/possibilities or needs/necessities inherent in participants of actions or situations; the SoAs involved are never positively or negatively factual. Deontic expressions (as defined above) crucially involve non-factual tenseless SoAs; the modal source desires their actualization. In epistemic expressions, it is the factuality status of the SoA itself that is being evaluated. The speaker indicates the extent to which he or she believes that the SoA applies or not. It should be noted that epistemic expressions involve tensed SoAs like the non-modal evaluative expressions described above. In fact, with these last ones they share the property of the question of likelihood of the SoA being discursively relevant (cf. Verstraete 2007: 42–46). Finally, in evidential expressions, it is also the factuality status of the SoA that is at issue: “by bringing up the issue of the sources, they signal that the existential [or, ‘factuality’, AVL] status of the state of affairs is not obvious” (Nuyts 2005: 23). Therefore, modal expressions do not take the factuality status of the SoA for granted. It is in this sense that claims such as modality “concerns that which is intermediate between positive and negative polarity” (McGregor 1997: 227) should be interpreted: modal expressions have a truth-value that can be situated between zero and one (cf. Halliday 1994: 88), or, in Narrog’s (2005b) terms, modalized SoAs are undetermined with respect to their factuality status. Basically the same idea underlies Givón’s (1995: 120–123) claim that epistemic uncertainty is the semantic common denominator of all submodes of irrealis, which include dynamic, deontic, epistemic and evidential meaning. By contrast, the SoAs being evaluated in non-modal evaluative expressions are all presented as either positively or negatively factual (i.e. their truth-value is either one or zero). In view of the conceptual properties of the various modal categories discussed in section

1.2.1, we can thus conclude that modality involves only non-factual SoAs, but not necessarily evaluative/attitudinal judgements, whereas evaluation involves only such judgements, but not necessarily non-factual SoAs. The figure showing the relation between modality and evaluation in section 1.3.4 can now be represented as Figure 5. Henceforth, I will use the term ‘modal-evaluative meaning’ to refer to the union of the modality and evaluation set (modality \cup evaluation). The three dots in the domain of evaluation suggest that more meanings could be added. I leave the question which types of meaning should be included for further research.

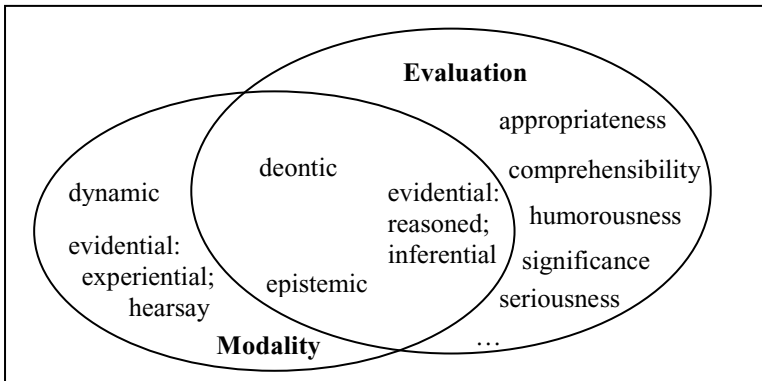


Figure 5. The relation between modality and evaluation: types of meaning

The exclusion of evaluative expressions with a tensed or presupposed SoA from the modal domain is also found in accounts that invoke the analytical apparatus of ‘possible worlds’. This theory derives from Leibniz (cf. Rescher 1979: 16ff), and is based on the assumption that a proposition can be said to be true in one specific (real or virtual; past, present, or future) world and false in another. Perkins (1983: 8), for example, defines modality in terms of the possible worlds in which events or propositions can be conceived of as being real or true. Expressions which presuppose the truth of the proposition under assessment do not open up a range of possible worlds, as the proposition is factual. They thus fall out of the scope of modality (Perkins 1983: 12). Likewise, Kiefer (1987: 88) does not regard evaluative expressions with a presupposed SoA as modal. His main argument is that “the validity of these presuppositions is independent of their evaluations, it is not relativized to a set of possible worlds” (1987: 88). Importantly, the theory of possible worlds can be recast in terms of factuality. Propositions or events that are ‘relativized to a set of possible worlds’ are invariably undetermined with respect to their factuality status. By contrast,

propositions or events that are not relativized to a set of possible worlds (such as the propositional complements in [33] to [35]) have a determined factuality status. We can thus conclude that the accounts in Perkins (1983) and Kiefer (1987) basically support the distinction between modal and non-modal evaluation proposed here.

In conclusion, evaluative constructions with adjectival matrices, in particular semantically weak ones, were shown to call for a reconsideration of the concept of deontic modality as defined in Nuyts, Byloo, and Diepeveen (2005, 2010). In particular, I proposed to factor in the factuality status of the SoA under assessment in order to distinguish more sharply between modal and non-modal evaluation. Constructions with a potential or tenseless SoA express (deontic) modal evaluation, whereas those with a presupposed or tensed SoA express non-modal evaluation. Accordingly, the definition of modality adhered to is that in terms of factuality. I have thus adopted Narrog's (2005b) line of argument, which excludes the expression of speakers' attitudes from the definition of modality. Together with situational dynamic meaning, the two types of evaluative meaning distinguished above make up the range of modal-evaluative meanings that the adjectival constructions studied here can express.

2.3. The conceptual map

The preceding sections have discussed the lexico-semantic and conceptual distinctions that are at work in the adjectival constructions studied here. Moreover, they have also pointed at some correlations between those distinctions. On the basis of these findings, it is now possible to draw a conceptual map, which integrates the lexical and conceptual boundaries dividing the modal-evaluative domain under investigation (cf. Van linden and Verstraete 2011: 154–157). The map not only covers adjectives, but also verbs, modal auxiliaries and the imperative mood. The division of labour between these categories will be discussed at the end of this section. I will first present my conceptual map, given in Figure 6, and focus on how it incorporates the distinctions observed in the preceding sections.

There are two basic distinctions along which the map is organized, represented by sets of arrows on the top and left side of the map. The first distinction is between conceptual and illocutionary meaning, or more generally, between the qualificational and the interactional system of language. In the analysis of the modal-evaluative domain, this distinction has been noted by Kiefer (1997: 247). A more profound discussion of the tension between these two domains is presented in Nuyts, Byloo, and Diepeveen

(2005, 2010) and Nuyts (2005). Traditionally deontic modality has been defined in terms of permission and obligation, which are speech act notions (cf. section 1.1.2). Against this traditional approach, Nuyts and his colleagues have suggested to differentiate between deontic attitudinal meaning, which is conceptual in nature, and directive meaning, which is illocutionary in nature, as adopted here in the conceptual map. This distinction is represented on the horizontal axis of the map.

Apart from the cognitive motivations discussed in sections 1.1.2 and 2.2.2, the study of adjectives also adduced lexico-semantic arguments to support the distinction between conceptual and illocutionary meaning, in the sense that specific sets of adjectives specialize in either type of meaning. In the map, lexical boundaries are represented in dashed lines. Adjec-

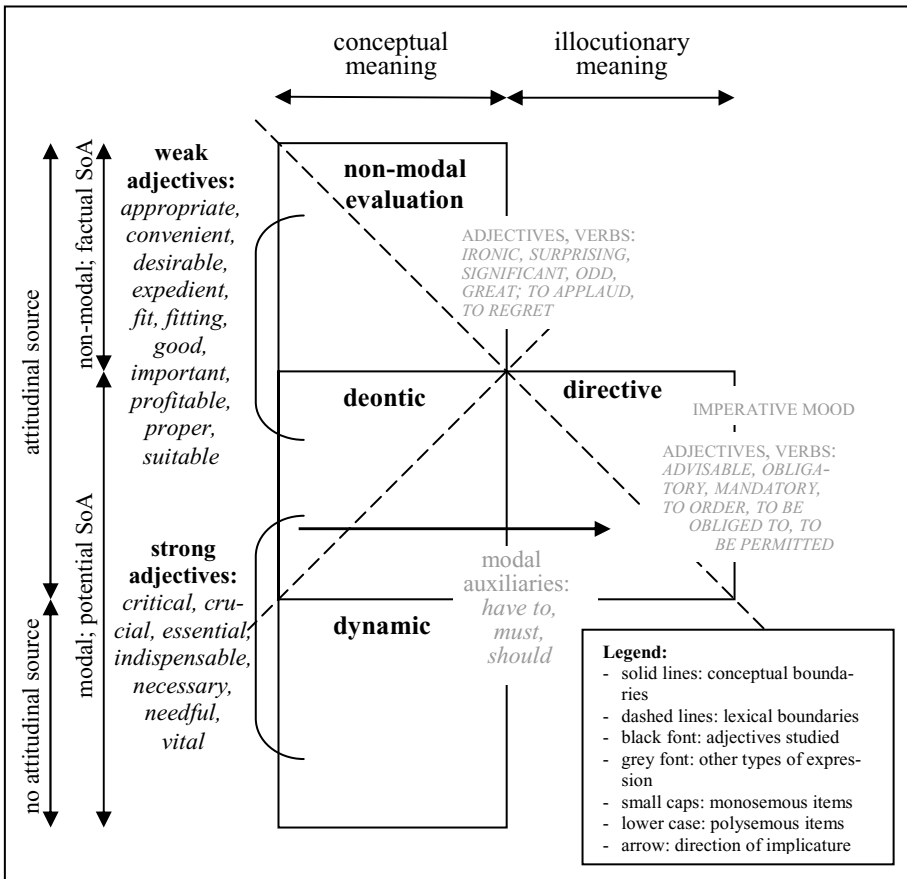


Figure 6. The conceptual map of the modal-evaluative domain studied

tives such as *advisable*, *obligatory*, *compulsory* and *mandatory* (in grey font) are all situated in the illocutionary domain on the right. They can only convey descriptive directive meaning, i.e. they report on a recommendation or an obligation, but they do not necessarily imply the speaker's commitment to desirability. The adjectives central to this book (in black font) are all located in the conceptual domain. It can be seen that on the horizontal axis both the deontic and directive adjectives are separated from the modal auxiliaries. This represents one way in which adjectives differ from modal auxiliaries: modals can be used to encode conceptual or illocutionary meaning, whereas the adjectives are restricted to one of these two types. Examples (42) and (43) illustrate illocutionary and conceptual meaning respectively.

- (42) The Aberdeen deal is subject to Monopolies and Mergers Commission clearance as it is **compulsory** to refer any bid by a purchaser with more than 500,000 daily sales for another title with more than 50,000. (CB, times) (*illocutionary*)
- (43) You don't belong to dear old Werner now – and I was fond of him believe me, but that's past – you belong to me. But it would be **proper** to visit your ex-fiancé's family. And you know them. (CB, ukbooks) (*conceptual*)

In addition, the arrow going from the conceptual to the illocutionary domain signifies that the adjectives studied – unlike the directive adjectives – can pragmatically shift domains. The arrow represents the plausibility of conversational implicatures from deontic meaning to directive meaning (see section 2.2.2): deontic constructions with weak adjectives such as (43) can be intended or interpreted as a piece of advice, whereas deontic constructions with strong adjectives can be intended or interpreted as an obligation.

Interestingly, there is evidence from grammaticalization studies that in other languages the arrow in the map also specifies the direction of grammaticalization processes. Out of the seventy-six languages sampled by Bybee, Perkins, and Pagliuca (1994: 31), thirty-four show traces of a lexical source for a form expressing obligation; three of these developed from adjectives. Both for Mwera (Niger-Congo) and Lahu (Sino-Tibetan), the source is 'be fitting, be proper' (1994: 183). In Palaung (Mon-Khmer), the particle for obligation means 'good', "perhaps giving the implication 'it is good, fitting to'" (1994: 183). In some Slavonic languages, impersonal adjectival matrices have also grammaticalized into markers of obligation (Hansen 2004: 250, 253). These grammaticalization processes are most

probably driven by semanticization or conventionalization of conversational implicatures, which is seen at work in related semantic changes as well (e.g. Traugott and Dasher [2002] on the development of English modal auxiliaries *must* and *ought to*; they speak of ‘invited inferences’, however). It should be noted that in the cross-linguistic data, it is constructions with weak adjectival matrices that develop into markers of obligation. In this sense, it is remarkable that it is the weakest or most polite deontic expression that has developed the strongest directive meaning. The question of why this is the case is beyond the scope of this book. What is important here is that there are indications that the arrow linking the categories on the horizontal axis of the map has diachronic as well as cross-linguistic validity.

The second basic distinction in the map is between dynamic, deontic and non-modal evaluative meaning, all within the conceptual domain. It is based on two parameters representing cross-cutting binary distinctions, which are symbolized by two sets of arrows on the vertical axis on the left side of the map. Specifically, the three types of meaning can be distinguished on the basis of the presence or absence of an attitudinal source, and on the basis of the factuality status of the SoA (see sections 1.2.1 and 2.2.3). Further conceptual properties of the various categories have been discussed in section 1.2.1, but the discussion here will focus on the two parameters. These distinctions have been proposed in previous work, but it is the way in which they are combined here that I believe offers a new perspective in the literature on modality.

First, the parameter of the presence or absence of an attitudinal source sets apart dynamic modality from both deontic modality and non-modal evaluation. This is a well-established parameter in analyses of modal meaning, see for instance Halliday (1970), Verstraete (2001), and Nuyts (2005). Dynamic expressions do not involve attitudinal judgements: abilities/possibilities or needs/necessities inherent in the participant or in the situation are indicated on the basis of SoA-internal grounds (see section 1.2.1). In (44), for instance, the necessity to keep urinating originates in the physical make-up of the human body (cf. Introduction).

- (44) This should make you want to go to the toilet frequently. Although it may sting the first few times you go, this usually gets better the more water you pass. It is **essential** to keep emptying the bladder if you are to flush out the germs. (CB, ukephem) (*non-attitudinal*)

Unlike dynamic expressions, deontic, epistemic, boulomaic and non-modal evaluative expressions do involve attitudinal sources, which make their as-

assessments of the SoA on the basis of SoA-external grounds. Like (44), examples (45) and (46) are repeated from the Introduction. (45) expresses deontic meaning: it is the speaker's moral conviction that it is sometimes appropriate not to forgive or forget the shortcomings of a friend. (46) expresses non-modal evaluative meaning: it is the speaker's moral or general conviction that as an IT consultancy it is appropriate that they are using the latest IT technology.

- (45) Sometimes it may be wholly **appropriate** not to forgive or forget. If your partner begs forgiveness and swears he will never do the same again, you may know in your heart of hearts that he's just confessing to get carte blanche to repeat the dirty deed. (CB, uk-mags) (*attitudinal*)
- (46) "As an IT consultancy, it's **appropriate** we're taking the initiative and using the latest IT technology," says Gary. The service employs INFOTAP 2000, a Windows-based software which enables audio information stored on a personal computer hard disk to be accessed by phone. (CB, today) (*attitudinal*)

Second, the parameter of the factuality status of the SoA sets apart non-modal evaluation from dynamic and deontic modality. This parameter supposes a definition of modality in terms of factuality, as put forward by, for instance, Narrog (2005b). Dynamic and deontic expressions do not take the factuality status of the SoA for granted. Instead, they are indeterminate with regard to their factuality status, or in Narrog's (2005b) terms, non-factual. In this sense, they are modalized expressions. The examples of dynamic and deontic modality in (47) and (48) below have been discussed earlier in section 1.1.1 and the Introduction respectively, and are repeated here. In each case, the modalized SoA is potential or tenseless. By contrast, non-modal evaluative expressions invariably involve presupposed (and tensed) SoAs: the attitudinal source expresses his or her commitment to a propositional content that is presented as presupposed true. Example (49) was discussed earlier in section 1.1.2, and is repeated here. The context and the added indications of time make it clear that the one-minute silence has occurred at the moment of the attitudinal assessment.

- (47) There had followed a nightmare procession along the sewer for what felt like and doubtless was several miles. For the first part of their journey it was **necessary** to move doubled up, in a position of almost unbearable discomfort. (CB, ukbooks) (*non-factual/modal*)

- (48) It was **essential**, he said, that money was better distributed, so that it reached the poorest people. Money was power and without it, Professor Desai said, the millions of poor in India would remain without a true say in the running of their country. (CB, bbc) (*non-factual/modal*)
- (49) Sir, It was poignant and entirely **fitting** that the nation should fall silent for one minute on Sunday to demonstrate its sympathy for Dunblane's awful loss; and how striking it was that supermarkets, stations and sports stadiums suspended their business at the time. Clearly this is the way that we prefer to mark or remember loss of life. (Letter from Lieutenant-Colonel Anthony Lake, March 20, 1996; March 13, a massacre took place in Dunblane, Scotland) (CB, times) (*factual/non-modal*)

The distinction between non-factual/modal and factual/non-modal SoAs can be found in the literature, albeit in covered terms. It is present in Perkins (1983) and Kiefer (1987), but these frame it in the theory of possible worlds (see section 2.2.3). Narrog (2005b), in turn, embeds this distinction in his argument against the inclusion of the notion of assertion into the definition of modality, as found in Palmer (2001). In this study, however, the difference in factuality status and its relation to modality is clearly brought to the fore. In this sense, I argue against Nuyts (2005), who takes deontic expressions to refer to either real or possible SoAs (see section 2.2.2). I will show that the study of adjectival constructions provides crucial evidence for the distinction between modal and non-modal categories.

Like the distinction on the horizontal axis, the distinctions on the vertical axis are corroborated by arguments from lexico-semantic distribution. It is clear from Figure 6 that the two cross-cutting parameters discussed above correlate with patterns of polysemy of weak and strong adjectives. Figure 7 visualizes the interaction of the parameters with the two sets of adjectives in relation to the conceptual categories they express. Weak adjectives are polysemous between deontic and non-modal evaluative meaning, as illustrated by *appropriate* in (45) and (46) respectively, but they do not occur in dynamic expressions. With regard to the parameters, this means that there is a subset of adjectives that specializes in attitudinal meaning; weak adjectives have a plus for the parameter of attitudinal source in Figure 7. The two arrows sharing this plus sign node indicate that for this subset the parameter of the factuality status provides a further distinction, i.e. between non-factual deontic meaning, involving potential SoAs, and factual evaluative meaning, involving presupposed SoAs. Strong adjectives, by contrast, can be used in deontic and dynamic expressions, as illustrated by *essential*

in examples (48) and (44) respectively, but they do not occur in non-modal evaluative ones. With regard to the parameters, this implies that there is also a subset of adjectives that is restricted to modal expressions with potential SoAs; strong adjectives have a minus for the parameter of factuality in Figure 7 (i.e. they are non-factual). The two arrows sharing this minus sign node likewise indicate that the parameter of the attitudinal source makes a further distinction between dynamic and deontic meaning. However, this distinction is merely conceptual: the first indicates needs or necessities on the basis of SoA-internal arguments, whereas the second is based on SoA-external (e.g. moral) grounds. Unlike in the case of deontic and non-modal evaluative expressions (see below), there are no formal differences between the complements of dynamic expressions and those of deontic ones. The shared arrow nodes in Figure 7 thus show that the parameter of the attitudinal source correlates with the patterns of polysemy of weak adjectives, whereas the parameter of factuality correlates with those of strong adjectives.

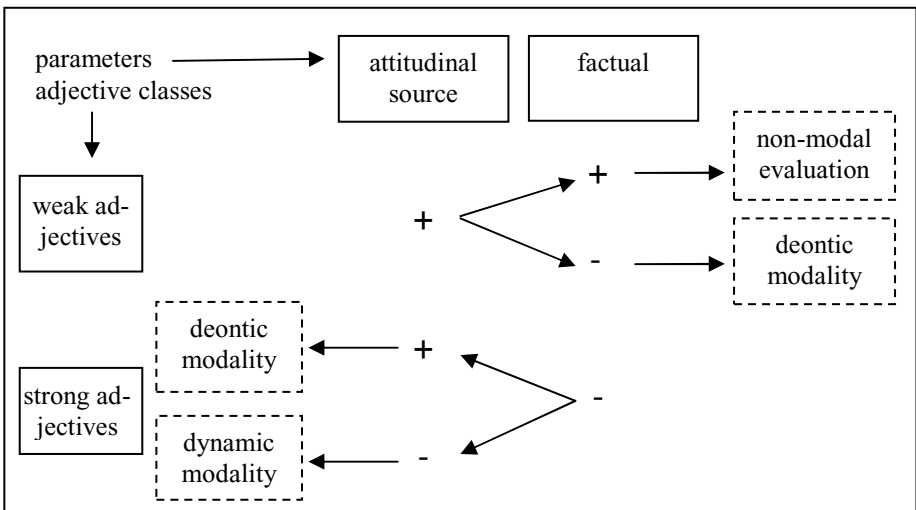


Figure 7. The parameters of the conceptual map and their interaction with weak and strong adjectives

Additional arguments for the distinction between the modal and non-modal categories pertain to the semantic and syntactic properties of mandative versus propositional complements. Notably, these properties all derive from the difference between tenseless and tensed SoAs. I have already shown that with *that*-clauses, the present-perfect contrast forms a deictic

contrast with propositional complements, but not with mandative ones (cf. examples [29]–[32] above). The same goes for *to*-infinitival complements: both semantic types can have a perfect *to*-infinitive, but only propositional ones locate the SoA as anterior to the temporal zero-point (see section 6.2.2), as in (50), taken from the *Corpus of Late Modern English texts* (CLMETEV) (see section 3.2), discussed earlier in the Introduction (example [7]), and repeated here.²⁵

- (50) “Before business you must get well; this is the best wine.” She refused it feebly. He poured out a glass. She drank it. As she did so she became self-conscious. However important the business, it was not **proper** of her to have called on him, or to accept his hospitality. (CLMETEV 1905 Forster, *Where angels fear to tread*)

The other differences relate to *that*-clauses. In Present-day English, for instance, only mandative complements allow the subjunctive mood, as in (51) (see section 5.2.1). Both semantic types of complement can have *should* as finite form, but this form has a different meaning in each type. Huddleston and Pullum (2002: 995), for example, distinguish between “mandative” and “attitudinal” *should*. They remark that only the first type, used in (52), can be replaced by a subjunctive form (2002: 1001). By contrast, the second type, used in (53), can only be replaced by an indicative form (or an epistemically used modal auxiliary). In addition, only for the second type the present-perfect contrast functions as a deictic one.²⁶ In (53), for instance, the perfect form *should have been brought* locates the SoA as anterior to the temporal zero-point (this example will be used again in sections 5.1.2 and 8.1.2).

25 The data do not include mandative perfect *to*-clauses, but it is easy to think up examples, such as (vi) below (cf. Bolinger 1967b: 348–351).

(vi) When you set out on a pole expedition, it is **crucial** to have prepared your luggage and equipment extremely well.

26 Like in the case of mandative *to*-clauses (cf. note 25), the data do not include instances of mandative *that*-clauses with a perfect *should* form. The following example is mine.

(vii) It is **vital** for our future economic development that we should have made full use of the talent produced by our universities and colleges by the next world exhibition.

- (51) Band chiefs finally had to call a doctor who gave Ronan medication. But he then said it was **vital** the star take a total break – despite a string of high-profile commitments. (CB, synnow)
- (52) They say nothing must hinder the hunters’ right to chase a deer for seven or eight hours, then kill it violently and bloodily. And they think it’s **essential** that they should be allowed to set their dogs on hares and watch them pull the animals apart. (CB, ukephem)
- (53) The village was marginally bigger than the last one and, being concealed in the protective shadow of the volcano, there was something strangely innocent about the unblemished beauty of the surrounding countryside. She thought it **fitting** that Michelle should have been brought there. (CB, ukbooks)

We can thus conclude that apart from the lexico-semantic arguments given above, there are also semantic and syntactic arguments in support of the distinction between modal and non-modal evaluation, which build on the distinction between tenseless and tensed SoAs.

Finally, the conceptual map includes not only adjectives, but also covers other formal types of expressions, such as modal auxiliaries and the imperative mood. Figure 8, in which the conceptual map has been redrawn as

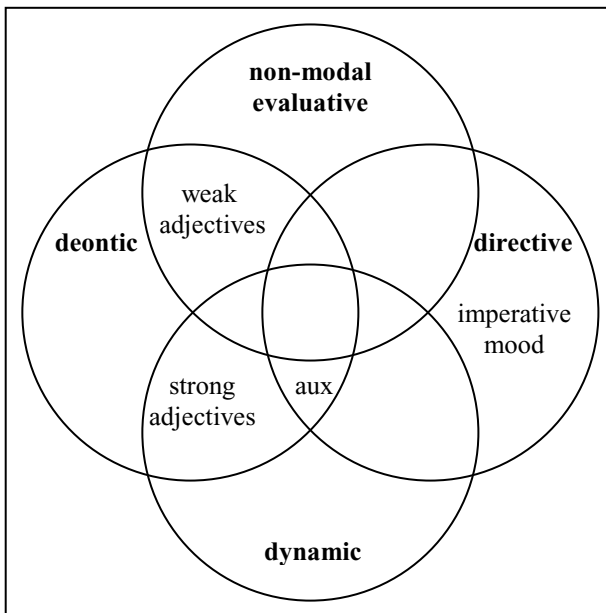


Figure 8. The types of expressions and their place in the conceptual map

a Venn diagram with four circles, shows the division of labour for the different parts of speech and inflectional categories in English. As can be seen in Figure 8, the modal auxiliaries are most central in the diagram, though not exactly at the intersection of all four circles. They can express deontic, dynamic and directive meaning, but they cannot be used to express non-modal evaluative meaning. The least polyvalent expression type is the imperative mood, which can do only one type of job, i.e. the expression of directive meaning. Intermediate between the imperative mood and the modal auxiliaries are the adjectives central to this book. Weak adjectives are found at the intersection of deontic and non-modal evaluative meaning, whereas strong adjectives are found at the intersection of deontic and dynamic meaning. These last ones are thus most similar to the modal auxiliaries, although they cannot encode directive meaning. The weak adjectives, however, have a functionality which the auxiliaries lack, i.e. they can express non-modal evaluative meaning, and they display a pattern of polysemy that is new in the literature on modality. Therefore, this diagram clearly shows that the study of modality and evaluation should not be restricted to modal auxiliaries or mood types. With this book on adjectival expressions I thus hope to contribute to a better and broader understanding of the modal-evaluative realm.

Chapter 3

Data and methods of the diachronic analysis

This chapter details the data and methods used in the diachronic analysis of the adjectival constructions studied here. As this analysis includes the stage of Present-day English, I will discuss both the diachronic and synchronic dataset and the corpora used for this study. I will show that serious changes have taken place in the inventory of adjectives qualifying for this study, especially up to Early Modern English, and that these changes motivate the selection of adjectives used in the case-studies presented in the next chapters.

3.1. The data

This study concentrates on adjectives that express a particular meaning within the positive sphere of the deontic modal domain, across the several historical stages of English. I already pointed out that I collected the Present-day English dataset of adjectives, given in the bottom row of Table 4, by use of *Roget's Thesaurus* (Dutch and Roget 1970) together with the online *Oxford English Dictionary* (OED) (see section 2.1). These adjectives also served as a starting point for the diachronic onomasiological search for lexical items. I used these adjectives in several thesaurus environments to find their historical counterparts. For Old English I used the online *Thesaurus of Old English* (TOE), and for Middle English the online *Middle English Dictionary* (MED). For the Early and Late Modern English period, I also used *Roget's Thesaurus* (Dutch and Roget 1970) and the OED. The adjectives thus found were subsequently searched for in five corpora (taking into account spelling variants), which will be presented in the next section; the specific queries used will be treated in section 3.3. The results of the corpus searches are given in Table 4, which shows the adjectives that were investigated per period, with the number of tokens between brackets.²⁷

²⁷ It is clear from Table 4 that up to Early Modern English the adjective *good* is far more frequent than all the other adjectives. However, its occurrence in the constructions relevant to this study is not so frequent compared to the total amount of attestations given in the table (which includes much 'noise'). In addition, its distributional development of semantic and formal types of comple-

In addition, the table also distinguishes between weak and strong adjectives.

As can be seen in Table 4, the set of adjectives is rather different for Old, Middle and Modern English. The data suggest that it is possible to distinguish between three groups of adjectives on the basis of their relative diachronic availability in the English language. A first group includes adjectives such as *niedþearf* ('necessary') and *behefe* ('proper', 'necessary'), which were frequently used in the Old English period, but only marginally or not at all in the Middle English period. As can be inferred from the table, this group is rather large, including almost all Old English items. The second group, by contrast, is fairly small, consisting of the adjectives *good* and *meet* only. These adjectives are of Germanic origin and are attested in the constructions studied here from the Old English period onwards. They survive the Middle English period and are found in the Modern period as well, although *meet*, unlike *good*, has become very infrequent in Present-day English. The third group includes adjectives that entered the language in the Middle English period due to word formation, such as *needful* and *behofsam*, or language contact after the Norman Conquest (1066 AC), such as *essential*, *necessary*, *convenient* and *proper*. It can be seen that this third group is again a large one, which itself has undergone some changes. It can be noted that the set of Early Modern English adjectives is much larger than that of Present-day English ones, which can be explained by semantic changes and concomitant stricter selection restrictions. The adjectives *competent* and *skilful*, for instance, are still used in Present-day English, but they are only predicated of humans and they are not used in extraposition constructions anymore. The three groups of adjectives are represented in Table 5.

It is clear from Table 5 that there has been a changing of the guard in the lexical field under investigation: in the Middle English period, group C takes over duty from group A. It should be noted, however, that this change is not restricted to the semantic field of desirability. Lexical studies have shown that in the Middle English period, the original Old English word stock decreases steadily, whereas at the same time the lexicon is enriched with loans, especially from the Romance family, and also new word formations on the basis of Middle English lexical elements (e.g. Dekeyser 1986;

ments up to EModE is comparable to that found with the other adjectives (see Van linden 2010c). We can thus safely conclude that the data of *good* do not distort the overall picture.

Table 4. The adjectives under investigation (cf. Van linden 2008: 242, 2010a: 23; Van linden and Davidse forthcoming)

Period	Strength	Adjectives
OE (2,335)	weak (2,220)	andfenge 'suitable' (23), arlic 'fitting' (5), (ge)beorh(lic) 'fitting' (7), bryce 'profitable' (3), (ge)cop(lic) 'proper' (3), (ge)cweme 'agreeable' (61), (ge)cynde(lic) 'proper' (65), cynn 'becoming' (7), (ge)dafen(lic) 'proper' (35), (ge)defe(lic) 'fit' (5), fremful(lic) 'useful' (12), fremgendlic 'profitable' (3), geornlic 'desirable' (5), god 'good' (1,733), (ge)limplic 'fitting' (17), (ge)mæte 'meet' (4), medeme 'proper' (15), (ge)met(lic) 'fitting' (13), nyt(t)(lic) 'useful' (35), nyttol 'useful' (1), nytweorð(e)(lic) 'profitable' (35), (ge)radlic 'expedient' (3), rædlic 'expedient' (1), rihtlic 'proper' (53), (ge)risen(lic) 'convenient' (28), (ge)screpe 'suitable' (4), (ge)tæse 'convenient' (1), til 'good, suitable' (4), þæslic 'suitable' (14), (ge)þungen 'virtuous' (25)
	strong (115)	behef(e)(lic) 'necessary' (7), neadwis 'needful' (1), niedbehæfdlic 'necessary' (1), niedbe(hefe/hof) 'necessary' (18), (ge)niededlic 'compulsory' (1), niedþearf(lic) 'necessary' (43), þearf(lic) 'necessary' (44)
ME (3,186)	weak (3,067)	able 'suitable' (33), aise 'convenient' (3), bicumelich 'becoming' (28), comely 'appropriate' (3), commendable (2), competent 'suitable, proper' (3), convenient (8), covenable 'appropriate' (30), desirable 'desirable' (5), desirable (1), expedient (5), fremful 'useful' (6), good (2,525), goodly 'proper' (29), helply 'useful' (2), just (30), kendeli 'proper' (37), lele 'proper' (2), limplich 'suitable' (1), medeme 'proper' (3), (i)mete 'meet' (5), profitable (42), proper (4), (i)queme 'agreeable, suitable' (62), rightful 'appropriate' (133), semeli 'fitting' (18), servisable 'suitable' (2), skilful 'proper' (11), vertuous 'morally good' (34)
	strong (119)	behef(e)lic 'necessary' (20), behofsam 'profitable, necessary' (1), behoveful 'necessary' (1), behovely 'necessary' (4), necessarie (23), needly 'necessary' (1), niedful 'needful' (69)
EModE (4,640)	weak (3,756)	advantageable (1), appropriate (8), commendable (13), commodious (15), competent (14), convenient (192), covenable (2), desirable (13), expedient (27), fit (288), fitting (11), good (2,438), important (9), just (186), meet (120), pertinent (3), profitable (61), proper (137), rightful (4), servisable (9), shapely (1), skilful (32), suitable (27), useful (38), virtuous (107)
	strong (884)	critical (6), essential (51), indispensable (3), necessary (802), needful (16), vital (6)
LModE (10,780)	weak (7,593)	appropriate (189), convenient (420), desirable (415), expedient (93), fit (951), fitting (81), good (685), important (1,784), meet (51), profitable (172), proper (2,361), suitable (391)
	strong (3,187)	critical (380), crucial (6), essential (553), indispensable (222), necessary (1,623), needful (194), vital (209)
PDE (7,469)	weak (5,150)	appropriate (323), convenient (162), desirable (84), expedient (13), fit (306), fitting (78), good (1,241), important (2,598), profitable (40), proper (150), suitable (155)
	strong (2,319)	critical (120), crucial (193), essential (478), indispensable (16), necessary (1,032), needful (41), vital (439)

Table 5. Three groups of adjectives and their diachronic availability

Group	Adjectives	Old English	Middle English	Modern English
A	<i>niedþearf, behefe, gedafenlic, gelimplic, gerisenlic</i>	+	-	-
B	<i>good, meet</i>	+	+	+
C	<i>essential, crucial, critical, vital, proper, appropriate</i>	-	+	+

Burnley 1992; Kastovsky 1992; Rothwell 1998). The changing of the guard among the lexical items studied here is thus certainly not an isolated change in the lexicon.

Of the three groups distinguished above, the adjectives of group C lend themselves best to case-studies tracing the development of the three types of meaning distinguished in the conceptual map, i.e. dynamic, deontic and non-modal evaluative meaning. This group includes strong adjectives, such as *essential*, for example, which could not be used in dynamic or deontic expressions at the time when they were borrowed into English. In addition, it also includes weak adjectives, such as *proper*, for instance, which could not occur in non-modal evaluative constructions at the time when they appeared in deontic expressions. Therefore, the case-studies of the development of deontic meaning in strong adjectives, presented in chapter 4, and those of the development of non-modal evaluative meaning, presented in chapter 6, will focus on adjectives from group C. The lexical changes observed in the semantic domain studied thus justify the selection of adjectives used in the case-studies in the following chapters. The specific set of items looked at in these studies and further motivations for the selection will follow in the relevant sections.

3.2. The corpora

The diachronic and synchronic corpora used for this study are listed in Table 6 below. As can be seen, I used corpora that consist of prose texts only rather than those with both prose and poetry, such as, for example, the *Helsinki corpus* (cf. Rissanen, Kytö, and Palander-Collin 1993). As the object of investigation here is complex syntactic constructions with clausal complements, corpora of prose serve the purpose better (cf. Fischer 1992: 209). In what follows, I will briefly discuss the corpora. In addition, I will con-

centrate on the queries I used to search the corpora, and on the glosses I provided for the Old and Middle English data.

Table 6. The corpora used for each subperiod and their number of words

Subperiod of English	Time span	Corpus	Number of words (millions)
Old English (OE)	750–1150	<i>York-Toronto-Helsinki Parsed Corpus of Old English Prose</i> (YCOE)	1.45
Middle English (ME)	1150–1500	<i>Penn-Helsinki Parsed Corpus of Middle English, Second Edition</i> (PPCME)	1.16
Early Modern English (EModE)	1500–1710	<i>Penn-Helsinki Parsed Corpus of Early Modern English</i> (PPCEME)	1.79
Late Modern English (LModE)	1710–1920	<i>Corpus of Late Modern English texts (Extended version)</i> (CLMETEV)	15.01
Present-day English (PDE)	roughly 1990–1995	<i>Collins COBUILD corpus</i> (CB) (only British subcorpora)	42.10

The corpora used for the Old, Middle and Early Modern English period are often called sister corpora, as they are all large corpora based on the prose texts sampled in the *Helsinki Corpus* and syntactically annotated in very similar ways. The Old English data are taken from the *York-Toronto-Helsinki Parsed Corpus of Old English Prose* (YCOE) (Taylor et al. 2003) (see also <http://www-users.york.ac.uk/~lang22/YCOE/YcoeHome.htm>). The main draw-back of its large size is that it is not balanced in terms of genre and dialect. It is biased, on the one hand, towards religious prose and, on the other, towards the Southern dialects, especially West-Saxon, for example by the many and large samples of texts by Ælfric (c955–1010). It should be noted, however, that this dialectal bias reflects the earliest standardization attempts, initiated in the days of King Alfred (c849–901), through which West-Saxon developed into a supraregional dialect (Nevalainen and Tieken-Boon van Ostade 2006: 271). Table 7 presents the number of words per YCOE subperiod. In the following chapters, examples from the YCOE are provided with text source information according to the short titles used in the *Dictionary of Old English* and the manuscript dates that are given in Ker's (1957) *Catalogue of Manuscripts containing Anglo-Saxon*. These dates sometimes conflict with the periodization proposed by

the composers of the YCOE.²⁸ In the general counts of Old English constructions in chapter 5, I relied on the YCOE periodization.

Table 7. The subperiods of the YCOE and their number of words

Subperiod	Number of words
750–850	1,753
850–950	343,517
950–1050	764,960
1050–1150	340,146
Total	1,450,376

The Middle English data are extracted from the *Penn-Helsinki Parsed Corpus of Middle English, Second Edition* (PPCME) (Kroch and Taylor 2000) (see also <http://www.ling.upenn.edu/hist-corpora/PPCME2-RELEASE-2/>). The PPCME is also biased towards religious prose texts (bible, homilies, sermons and treatises), but to a lesser extent than the YCOE. It has a dialectal bias as well, but one towards the Midland dialects (especially East Midland), rather than the Southern ones. Again, the dialectal bias bears witness to sociolinguistic developments, as in Late Middle English the East Midland dialect gained in importance. In fact, it was spoken by the largest number of people, in a prosperous region that could boast the seat of government and administration, proper economic infrastructure, and the two universities Oxford and Cambridge, all very close to the archiepiscopal see of Canterbury (Nevalainen and Tiekens-Boon van Ostade 2006: 274–275). All in all, the PPCME is more balanced than the YCOE. Its subperiods and their number of words are given in Table 8.

Table 8. The subperiods of the PPCME and their number of words

Subperiod	Number of words
1150–1250	258,090
1250–1350	93,999
1350–1420	403,007
1420–1500	400,869
Total	1,155,965

For the PPCME examples given in the following chapters, the source text is referred to by the title stencil of the *Middle English Dictionary* (MED), and

28 The manuscript of *Bede's History of the English Church*, for instance, dates from 1050–1099 according to Ker (1957) (cf. [2] below), but in the YCOE the text is assigned to the period 850–950.

the date of the manuscript is the one given in the MED. When not exact, MED dates are given by quarter century: *c* ('circa') indicates a date preceding or following the given date by 25 years and *a* ('ante') indicates a date within the 25 years preceding the given date. A question mark indicates doubtful or uncertain information.

The Early Modern English data are retrieved from the *Penn-Helsinki Parsed Corpus of Early Modern English* (PPCEME) (Kroch, Santorini and Delfs 2004) (see also <http://www.ling.upenn.edu/hist-corpora/PPCEME-RELEASE-1/>). It consists of the Early Modern English prose texts of the *Helsinki corpus*, and two parallel supplements (Penn 1 and Penn 2). This corpus is well-balanced in terms of genre and dialect. For all texts taken from the *Helsinki corpus*, the general label 'English' is given as dialectal information (the texts of the Penn supplements lack this information), which reflects the progress made in the (second) standardization process started in the Middle English period, as described in Nevalainen and Tienken-Boon van Ostade (2006: 277–282). The three subperiods and their number of words per subpart are presented in Table 9. The PPCEME examples used in the following chapters will be provided with the source and composition date mentioned in the text information of the PPCEME.

Table 9. The subperiods and subparts of the PPCEME and their number of words

Subperiod	Helsinki	Penn 1	Penn 2	Total
1500–1570	196,754	194,018	185,423	576,195
1570–1640	196,742	223,064	232,993	652,799
1640–1710	179,477	197,908	187,631	565,016
Total	572,973	614,990	606,047	1,794,010

For the case-study of the development of propositional complements presented in chapter 6, however, I used a larger EModE corpus, namely the *Corpus of Early Modern English texts* (CEMET) (De Smet 2008: 14–16). Its text samples are collected from online archiving projects, such as the *Gutenberg Project* and the *Oxford Text Archive*. I only used data from its second subperiod, 1640–1710, which contains 1,943,392 words from a representative set of authors. The majority of text material is prose, but the corpus includes some drama as well. For each CEMET example cited in the following chapters, I mention author, title and date of publication (or that of composition in the case of letters).

For the Late Modern English period, I used the extended version of the *Corpus of Late Modern English texts* (CLMETEV), also developed by De Smet (2005, 2008: 17–19, 21–29). Similar to the CEMET, this corpus has

been compiled on the basis of texts from the *Project Gutenberg*, the *Oxford Text Archive* and the *Victorian Women Writer's Project*. It consists of prose text samples from a great variety of authors from different social backgrounds, including also Irish and Scottish authors, next to English ones.²⁹ Table 10 details the number of words of its three subperiods. Again, for all examples given in the following chapters I identify the author, title and date of publication of the source text (or that of composition in the case of letters).

Table 10. The subperiods of the CLMETEV and their number of words

Subperiod	Number of words
1710–1780	3,037,607
1780–1850	5,723,989
1850–1920	6,251,804
Total	15,013,400

The Present-day English data are taken from the COBUILD corpus Bank of English (CB) (cf. Clear et al. 1996) via remote log-in, more specifically from its British English subcorpora (for more information, see <http://www.collins.co.uk/cobuild/>). The set of British material is diversified in terms of genre and register, as it includes texts from radio broadcasts, quality and popular newspapers, novels, ‘ephemera’ such as leaflets, advertisements and personal letters, and samples of spontaneous dialogue. These

Table 11. The British subcorpora of the COBUILD corpus and their number of words

Subcorpus	Description	Number of words
ukephem	Ephemera produced in Britain	3,124,354
ukbooks	Books published in Britain (fiction and non-fiction)	5,354,262
ukmags	British magazines	4,901,990
ukspok	Spontaneous dialogues from all over Britain	9,272,579
bbc	BBC World Service radio broadcasts	2,609,869
times	<i>The Times</i> and <i>The Sunday Times</i> , quality newspaper published in London	5,763,761
sunnow	<i>The Sun</i> , popular newspaper published in London	5,824,476
today	<i>Today</i> , popular newspaper published in London	5,248,302
Total British English COBUILD data		42,099,593

29 It should be noted that the CLMETEV also contains one drama text, namely *The beggar's opera* by John Gay (1728).

texts and samples date from 1990 until roughly 1995. All British subcorpora and their number of words are presented in Table 11. For the CB examples included in this study, the subcorpus is indicated between brackets. In addition to the CB data, I occasionally use examples from the Internet as Present-day English data. In these cases, I provide the URL and date of access.

It is clear from the descriptions of the corpora above that they differ in size across the historical periods. As, moreover, the data are not distributed evenly throughout the various periods, I will provide normalized frequencies per 100,000 words where necessary. These have been rounded to two decimal places, or, in case of figures with larger decimals, to at least two significant digits. The calculations of these frequencies are based on the number of words given for each corpus and period in the tables above. In the following chapters frequencies are computed on the basis of the adjectival matrix. That is, cases with coordinated adjectives (both included in the data set) being construed with one clausal complement are counted as two instances. Cases with one adjective being construed with coordinated complements count as one instance.

3.3. Queries and glosses

Now that the corpora have been discussed, we can turn to the queries used to search the corpora. Up to Late Modern English, the various queries merely looked for the lexical items listed in Table 4 above, of which I took exhaustive samples. For two adjectives in Late Modern English only, namely *good* and *necessary*, queries were limited to the adjectives immediately followed by *that*, *to* and *for*, as the total number of instances would otherwise have become unmanageable. For the PDE data, I also used a special design of query to avoid as much noise as possible. For the copular extraposition construction (e.g. *it is essential that...*) I included *it* in the queries, and the copular verbs *be*, *become*, *seem* and *appear*. To retrieve complex transitive extraposition constructions (e.g. *I think it essential that...* or *it was thought essential that...*), I combined the adjectives with eleven verbs, specifically *believe*, *consider*, *deem*, *feel*, *find*, *hold*, *judge*, *make*, *render*, *see* and *think*. All the data were managed in the computer tool *Abundantia Verborum* (Speelman 1997).

In order to make all corpus data accessible to the reader, I will provide glosses for the Old and Middle English corpus examples in the next chapters. In most examples, these are fairly general, with inflected noun phrases being glossed only for genitive and dative case (the latter only if they are

not preceded by a preposition), as shown by the *king.GEN* gloss given for the genitive case-marked noun *ciningces* in (1).

- (1) *Cristenes ciningces handgrið*
 Christian.GEN king.GEN handgrith
 ‘the Christian king’s handgrith’ (YCOE 1040–1060 LawICn 2.2)

In examples where marking of other cases is important, these will be indicated as well. Verb phrases are translated into their Present-day English counterparts; only if the mood type of the finite form is relevant, for example in dependent *that*-clauses, it receives a more specific gloss, as illustrated in (2).

- (2) *Wæs þæt eac gedefen, þætte þæt swefn gefylled wære,*
 was that also fitting, that that vision fulfilled be.PST.SBJV
 ‘That was also fitting, that that vision was fulfilled’ (YCOE 1050–1099 Bede 4 24.336.28)

In citing examples glossed by the cited author, I sometimes adjust his or her glosses so as to make the glossing practice consistent. Such minor changes or additions are indicated between square brackets, as shown in (3). In cases where the cited author does not provide glosses, I gloss the example myself, indicating this by adding ‘(my glosses)’. The abbreviations used in the glosses are listed on pages xix–xx. These generally follow the convention of the Leipzig Glossing Rules (see <http://www.eva.mpg.de/lingua/resources/glossing-rules.php>).

- (3) *ic eom sona gearo þæt ic gange to minum discipulum*
 I am at.once ready that ic go[.PRS.]SBJV to my disciples
 ‘I am now ready to go to my disciples’ (LS 1.1 [Andrew Bright] 306, cited in Los 2005: 172 [39b])

This chapter has presented the historical and Present-day English data on which the discussions in the following chapters are based, and the various diachronic and synchronic corpora, from which these data have been extracted. We can now turn to the more data-oriented chapters of this book, starting with the adjective-focused part of the diachronic analysis of the complex adjectival constructions.

Chapter 4

The semantic development of the adjectival matrix

This chapter presents the diachronic analysis of the adjectives that are part of the matrix of the complex constructions studied here, tracing the semantic developments from their original, descriptive meaning to deontic meaning. It will reveal the diachronic relations between the three conceptual categories in the conceptual map, proposed in chapter 2, and it will define its vertical axis as a pathway of change. In this sense, it demonstrates the validity of the map for diachronic analysis.

In the diachronic research on modal categories, much attention has been devoted to modal auxiliary verbs (e.g., Goossens 1983, 1999; Plank 1984; Sweetser 1990: 49–75; Bybee, Perkins, and Pagliuca 1994; Hansen 1998, 2004; Van der Auwera and Plungian 1998; Diewald 1999; Traugott and Dasher 2002: ch. 3; Loureiro Porto 2005). As discussed in section 1.2.2, it is common for modal auxiliaries to develop from descriptive, non-modal meaning over dynamic to deontic meaning (e.g. *can*, *may*, *must*). Likewise, for many of the adjectives studied here, deontic readings have not always been available in the history of English. In this chapter, I will focus on strong adjectives, as these were shown to be semantically most similar to the modal auxiliaries (see section 2.3 on the division of labour among the various formal types of expressions). In general, I will show that the semantic development of these adjectives follows the path from dynamic to deontic meaning, and involves a process of subjectification, as has been observed for the modal auxiliaries. It will also become clear that the development of the lexical items cannot be dissociated from the constructions they appear in – broadly understood here as including patterns of co-occurrence and patterns of (prepositional or clausal) complementation. As with the modal verbs, the lexicon-syntax interface thus plays an important role in the semantic development of the adjectives as well. It will also turn out that the mechanisms driving the specific semantic changes are typical of change in general (cf. Geeraerts 1997: 93–102), rather than restricted to the adjectival developments.

Apart from the dynamic-deontic development, which mirrors that of modal verbs, this chapter will also offer a number of new insights. I will show that the development towards dynamic modal meaning in adjectives differs from that noticed for modal auxiliaries. In the case of the modal verbs, there is a change from non-modal descriptive to participant-inherent

dynamic meaning, and from participant-inherent to participant-imposed or situational dynamic meaning (e.g. Van Ostaeyen and Nuyts 2004). In the case of the adjectives, by contrast, there is no intermediate stage of participant-inherent dynamic meaning. Rather, the development of situational dynamic meaning crucially involves (the emergence of) two properties in their semantic make-up, which will be called ‘relationality’ and ‘potentiality’. Relationality is needed to turn the adjective into a predicate of necessity that can link two concepts, for instance a part and a whole, or a condition and a goal. Potentiality is needed to ensure that the relationship established by the adjective is one of indispensability, which gives rise to dynamic meaning (cf. Van linden, Verstraete, and Cuyckens 2008; Van linden 2010b). I will thus argue that these two semantic properties constitute the conditions of entry into the conceptual map. It will also become clear that the property of relationality forms the semantic condition for complementation. In addition, I will show that some adjectives, after they have acquired deontic meaning, even develop non-modal attitudinal meaning – unlike the modal auxiliaries. Therefore, the semantic developments discussed here can be characterized as an upward movement in the conceptual plane of the conceptual map.

A further difference from the development of the modal auxiliaries is inextricably linked to the category of adjectives. The historical data will show that the adjectives develop from non-gradable into gradable items, which has been noted to be a general tendency by Paradis (2001: 58).

This chapter begins by accounting for the choice of the four adjectives that are investigated in detail here. The essence of this chapter lies in the discussions of the semantic development of these adjectives in terms of the semantic properties of relationality and potentiality, leading to dynamic meaning. Although all four adjectives differ in the way they develop these properties, it proves possible to generalize over the four cases and I propose two pathways of change from non-modal or premodal to modal meaning. A third property that is relevant is that of desirability, which leads from dynamic to deontic meaning. Lastly, I will also briefly reflect upon the semantic development of the weak adjectives.

4.1. The data: Latin and Romance loans

In the previous chapter, the adjectives studied here were divided into three groups, termed A, B and C, on the basis of their relative diachronic availability in English. The adjectives that lend themselves best to the type of study envisaged here are those of group C, which came into English in the

course of the Middle or Early Modern English period. The case-studies in the next sections deal with the Latin and Romance loans *essential*, *vital*, *crucial* and *critical*, as these offer a diachronic window on the development of deontic meaning. The adjectives of group A do not qualify as they offer only a synchronic window on Old English. The adjectives of group B, although they offer a diachronic window like group C, do not qualify either, as they have been found in deontic expressions from Old English onwards. The adjectives of group C, by contrast, were borrowed with a non-modal descriptive sense and only later acquired deontic meaning. The earliest, non-modal attestation of *essential*, for example, is given in (1). In the Present-day English example (2), *essential* is used in a deontic expression, as defined in section 2.2.3.

- (1) *þe Escencyalle Ioy es in þe luþe of Godd ...*
 the essential joy is in the love of God
 ‘The essential joy is in the love of God’ (PPCME c1440 ?Rolle þi ioy [Thrn] 17)
- (2) But quite apart from mediation, it is **essential** that more explicit recognition is given in the Bill to the important role marriage counselling can play in exploring the possibility of reconciliation. (CB, times)

The case-studies below will provide us with two distinct pathways to deontic meaning. One pathway is illustrated by *essential* and *vital*, whereas the other is followed by *crucial* and *critical*. Before going into the details of the adjectives, however, I will first briefly discuss the data on which these studies are based. I relied extensively on the electronic version of the *Oxford English Dictionary* (OED), especially the etymological information provided for each lemma and the general quotation database. As nearly all quotations are precisely dated, they are very helpful in tracking the semantic development of the adjectives in question. In addition to the OED, I also used the set of diachronic and synchronic corpora presented in Table 6 in section 3.2, to corroborate the findings. It should be noted, though, that in some cases I found a considerable time lag between the first attestation of a use in the OED and its occurrence in the corpus data.

4.2. The semantic development of *essential*

This section describes the semantic development of the strong adjective *essential*, in which four stages can be distinguished as the result of three

semantic changes, as proposed in Table 12. The first change starts from its original meaning and leads to a relational type of meaning, which is termed ‘defining necessity’. The second change leads to (situational) dynamic modal meaning, which requires the development of the property of potentiality (see also Van linden 2010b: 544–549). The third and final change involves the development of the feature of desirability on SoA-external grounds, and gives rise to deontic modal meaning. It will also be argued that the main driving factors of these semantic changes are patterns of co-occurrence and subjectification (cf. Van linden, Verstraete, and Cuyckens 2008: 231–240).

Table 12. The four stages in the semantic development of *essential*

Stages	→	stage 1: original meaning	stage 2: defining necessity	stage 3: dynamic meaning	stage 4: deontic meaning
Map	→	outside the conceptual map		in the conceptual map	
First attestation	→	c1440	1596	1618	1842
Meaning	→	‘being such by its true nature’	‘constituting the true nature of’	‘indispensable for’	‘morally necessary’
relationality		-	+	+	+
potentiality		-	-	+	+
desirability		-	-	-	+

Essential is not a Germanic word, but it was borrowed into English from Latin in the 15th century. It is an adaptation of the Late Latin word *essentialis*, which in turn derives from the noun *essentia* ‘essence’ (OED, s.v. *essential*). It is clear from Table 12 that the original meaning of *essential* is not relational, nor potential. It can be paraphrased as ‘being such by its true nature’, or ‘being such in the true sense of the word’, as in (3). The OED reads “that is such by essence, or in the absolute or highest sense” (OED, s.v. *essential*).

- (3) *For þe souerayne and þe **Escencyalle** Ioy es in þe lufe of*
for thesovereign and theessential joy is in thelove of
Godd by hym-selfe and forhym-selfe, and þe secundarye es in
God by himself and forhimself, and the secondary is in
comonyng and byhaldyng of Aungells and gastely creaturs.
communing and beholding of angels and ghostly creatures
‘For the sovereign and the essential joy is in the love of God by
himself and for himself, and the secondary (joy) is in the commun-

ing and the beholding of Angels and ghostly creatures' (PPCME c1440 ?Rolle þi ioy [Thrn] 17)

In (3), the adjective *essential*, like *secondary*, denotes a type of joy. In this sense, it serves the function of a classifier³⁰ rather than attribute of the noun *joy*. Semantically, classifiers designate a subtype of the more general type referred to by the head noun, and “tend to be organized in mutually exclusive and exhaustive sets” of that general type (Halliday 1994: 185). The two types of joy in (3) are contrasted, and thus presented as mutually exclusive and exhaustive sets of joy: *essential joy* (meaning ‘true’, ‘basic’, ‘substantial’ or ‘primary’ joy) as opposed to *secondary joy* (meaning ‘derived’, ‘accidental’ joy).

On its pathway to deontic meaning, the first semantic extension of *essential* involves the development of relational meaning (cf. Table 12), which is illustrated in (4).

- (4) Sensibility and a locomotive faculty are **essential** to every living creature. (OED 1656 Bramhall, *A replication to the bishop of Chalcedon* i. 5)

In (4), sensibility and a locomotive faculty are said to form the essence of every living creature. This use of *essential* is relational because it does not denote a type of something (e.g., a type of joy as in [3]), but serves to relate two concepts, in the case of (4) sensibility/locomotion and life. While the original sense of *essential* is still taxonomic, in that it applies to types, the relational meaning is partonomic, in that it applies to parts in relation to a whole. This shift is also reflected in the syntactic potential of the adjective: it does not function as a classifier, but as an attribute in predicative position, and it can take a prepositional complement. Moreover, it has changed from a non-gradable to a gradable item: in examples such as (4) *essential* can take totality modifiers such as *absolutely* (cf. Paradis 2001: 50–53).

30 Classifiers can be opposed to attributes, which assign a (typically gradable) quality to the instance referred to by the NP, as *new* in *a new bike*, or *beautiful* in *a beautiful girl* (Bolinger 1967a: 14–20; Teyssier 1968: 225–249; Halliday 1994: 184–186). Unlike attributes, classifiers can only occur in prenominal position and never appear predicatively. Furthermore, since classifiers do not attribute a quality to the referent of the NP, but modify the reference of the head noun (Bolinger 1967a: 14–15), they are not gradable, i.e., they “do not accept degrees of comparison or intensity” (Halliday 1994: 185).

It has been shown that the diachronic bridge between the original classifier use in (3) and the later relational use in (4) is constituted by structures in which the classifier co-occurs with relational nouns like *property*, *attribute* or *part*, which make schematic reference to a whole, and have the conception of a part-whole relationship as a background (cf. Langacker 1991: 38–39). Examples are in (5) and (6).

- (5) Heate is the **essential** propertie of fire (OED 1620 Granger, *Syntagma logicum, or the divine logike* 66)
- (6) Mercy as it is Radically in God and an **essential** attribute of his. (OED a1631 Donne, *Sermons* [1953] VI. 170)

Relational nouns that are based on a part-whole or inclusion relationship are semantically permeable and therefore able to transfer their relational property to adjectives that classify them. *Essential* thus developed relational meaning through patterns of co-occurrence with relational nouns; for more details on this development I refer the reader to Van linden, Verstraete, and Cuyckens (2008: 232–234) and Van linden (2010b: 546).

The type of meaning expressed by relational uses of *essential*, like in (4) to (6), is termed ‘defining necessity’ here (Van linden, Verstraete, and Cuyckens 2008: 234), cf. Table 12. If certain properties or attributes are said to constitute the essence of something, they are necessary to it, for otherwise we might as well be referring to just something else. This type of necessity is different from the classic dynamic-modal type of necessity, i.e. the necessity we experience when something is lacking or needed for a particular purpose. The second semantic change in the development of *essential* then is the extension from the sense of defining necessity to that of dynamic necessity, for which the development of potential meaning is decisive.

The differences between the two types of necessity can all be related to the notion of definition. The first type of necessity obviously is defining in nature, whereas the second type is not. The expression in (5), for example, can be paraphrased as ‘fire is (necessarily) hot’, and the one in (6) as ‘God is (necessarily) merciful’. In these paraphrases, the predicates do not add any new information to the subject, but define it. Being hot, for instance, is a defining characteristic of fire. In this sense, the paraphrases are analytical propositions, in which subject and predicate are linked by virtue of their intension. Moreover, what is considered as necessary in a defining way (e.g., *mercy* as necessary to *God* in [6]) is intrinsically present in it. (Note that this is to a high degree determined by the speaker’s *Weltanschauung*. An ancient Greek speaker, for example, would not see mercy as an essen-

tial attribute of god, e.g., Zeus.) Finally, defining necessity applies to all instances of the type denoted by the head noun to which something is said to be necessary: all fires, for instance, are hot.

Dynamic (modal) necessity, by contrast, has very different semantic properties. Consider the following example.

- (7) And practice, though **essential** to perfection, can never attain that to which it aims, unless it works under the direction of principle. (CLMETEV 1776 Reynolds, *Seven discourses on art*)

In (7), ‘practice’ is not defining of ‘perfection’. The expression is a synthetic proposition, in which the predicate is not linked to the subject on the basis of its intension, but adds new information about the subject. Moreover, dynamic necessity does not really imply an inherent presence, such as the presence of mercy in God in (6), but rather the absence of something that is desirable for a certain goal, such as ‘practice’ in (7). The subtype of dynamic meaning at issue thus is situational in the sense defined in section 1.1.1: the necessity of ‘practice’ is inherent in the situation of reaching perfection, with the necessity being signalled on the basis of SoA-internal grounds. Finally, as this type of necessity is not defining in nature, it does not necessarily concern all instances of the type denoted by the head noun to which something is said to be essential.

The semantic extension of *essential* from the sense of defining necessity to that of dynamic necessity can be attributed to the emergence of potential meaning (cf. Table 12). Through this development, *essential* enters the conceptual map via the lowest space in the conceptual plane, namely that of (situational) dynamic meaning. The corpus examples show that the origin of the potential element that gives *essential* a dynamic meaning is twofold: either the element to which something is said to be essential is a potential action, such as reaching the state of perfection in (7) above, or it is modified by an evaluative adjective, as in (8).

- (8) Government is **essential** to formed and regular Societies. (OED 1681–1686 Scott, *The christian life* [1747] III. 386)

Examples such as (8) appear in the early 17th century, not much later than the first relational (but non-potential) uses of *essential* (1596), and predate examples like (7). In (8), the noun *societies* to which *government* is said to be essential is modified by the evaluative adjectives *formed* and *regular*. These adjectives indicate that the predication of being essential does not apply to all instances of the type ‘society’, but only to a subjectively de-

finer subset of them. The type of subjectivity intended here is the one involving the speaker's evaluation of an entity, i.e. the description of a content based in the speaker's subjective attitude towards the situation. In their typology of subjectivity, De Smet and Verstraete (2006: 385–387) term this type of subjective meaning “ideational semantic subjectivity”, which is different from the type conveyed in deontic expressions (see below). In examples like (8), the subjective meaning gives rise to potential meaning. Example (8) can be paraphrased as ‘in order for a society to be considered formed and regular, it should have government, or it should be governed’. This condition-goal paraphrase makes it clear that evaluative adjectives bring with them the notion of dynamic (situational) necessity. The examples (7) and (8) thus show that the extension of *essential* to evaluative contexts and contexts of potential action involves a semantic extension of the adjective: the relationship established by it has been extended from one of intrinsic inclusion (in contexts of defining necessity) to one of indispensability (in contexts of dynamic necessity). For more examples and a more elaborate discussion of the effect of evaluative adjectives and potential actions, I refer the reader to Van linden, Verstraete, and Cuyckens (2008: 236–238).

The final semantic change of *essential* on its pathway to deontic meaning involves an extension from situational dynamic to deontic meaning (cf. Table 12). Whereas in dynamic expressions necessities are indicated on the basis of SoA-internal grounds, deontic utterances need an attitudinal source (typically the speaker) in whose view a certain action is assessed as necessary or desirable on the basis of (moral) arguments that are external to the SoA (see sections 1.1.2 and 2.2.3). In this sense, the development of the property of desirability involves the process of subjectification as defined by Traugott (1989: 35), in which “meanings tend to become increasingly based in the speaker's subjective belief state/attitude toward the proposition”. Specifically, deontic expressions are subjective in that they enact the speaker's position with regard to the situation – De Smet and Verstraete (2006: 387) label this type “interpersonal semantic subjectivity”. A hypothesis about how the process of subjectification might have taken place is detailed in Van linden (2010b: 564–565). Deontic utterances appear in the first half of the 19th century. An example is given below.

- (9) The Anglo-Catholics consider it **essential** to be ordained by bishops receiving their appointment in regular succession from the apostles. (OED 1842 Gell, *Serm. Visitation Archdeacon of Derby* 33)

In (9), the Anglo-Catholics are the attitudinal source who consider it desirable or morally necessary that the bishops ordain them (and not, for instance, other ministers of the Church of England). Note that the attitudinal source is coded here as the matrix subject of the complex transitive construction (see section 5.1.2). Here, the action or SoA itself is expressed, but the goal or entity for which the SoA is assessed as essential is not. In fact, it is hard to express to what goal or entity an SoA can be considered morally necessary, or, in other words, with which SoA or entity *essential* links the SoA represented in the *to*-clause. In rather abstract terms it can be proposed that an SoA is regarded as desirable to the good cause, or to what the attitudinal source considers good or suitable in general, rather than to any specific SoA or entity, which would make the utterance dynamic. With the involvement of an attitudinal source, *essential* is thus moved up in the conceptual plane of the map, from the lowest space of dynamic meaning to the middle space of deontic meaning.

In conclusion, in the development from its original, descriptive meaning to deontic meaning, *essential* first acquired relational meaning through co-occurrence with relational nouns, and came to express defining necessity. The data showed that this first semantic property functions as the condition for complementation. Later on, co-occurrence with evaluative adjectives and potential actions drove the emergence of potential meaning, and the extension from intrinsic inclusion to indispensability or dynamic necessity. It is not surprising that the earliest instances of potential meaning were found in evaluative contexts, since these are still close to defining contexts on account of the inclusion relationship between the two entities linked by *essential* (e.g. government and societies in [8]). Contexts of potential action, by contrast, are both diachronically (cf. [7]) and semantically further ‘removed’ from defining contexts, because they have given up the inclusion relationship at all. The final semantic extension of *essential* led to deontic meaning through subjectification, a mechanism that will be appealed to in the semantic development of the other adjectives as well.

More generally, this case-study of the semantic development of *essential* has demonstrated the diachronic applicability of the conceptual map. After the development of the semantic properties of relationality and potentiality, *essential* can be used to express situational dynamic meaning, the lowest conceptual category in the map. Therefore, these two properties can be thought of as the semantic conditions of entry into the conceptual map, as will be confirmed by the following case-studies. In a later stage, deontic meaning develops from this dynamic meaning. At that moment, *essential* belongs to the middle category in the map as well, and has thus become modally polysemous. In Present-day English, however, *essential* is also –

though very infrequently – found in expressions which do not involve an assessment of a potential SoA in terms of desirability, but which comment on a propositional content. In those expressions, *essential* seems to belong to the highest conceptual category in the map, i.e. that of non-modal evaluation. An example is given in (10) below. A more detailed discussion of the development of this type of meaning will follow in section 6.4.1. For now, it suffices to say that the semantic development of *essential* can be characterized by an upward movement in the conceptual plane of the map.

- (10) Each time that IVF is carried out more than one embryo is implanted into the uterus in an attempt to increase the er rate of success. But it is still the case that only twenty per cent of embryos put into the er uterus will actually implant into the wall. This has to be compared with only twenty-five per cent of embryos er which are conceived normally. So it's still a low rate but there is that discrepancy. And the number of live births from IVF or as they call them in the clinics the take-home baby rate is about nine to ten per cent only on average. Therefore research is very important to try and find out why this rate is so low. And what they look at are things like the er medium in which the first of all <ZF1> the <ZF0> the egg matures <ZF1> and <ZF0> and that the embryo grows in before it's implanted. In in in this case it it is **essential** that it is human embryos which are researched on rather than for example mice which are er one of the common research materials because it's already been found that the human embryo has quite different growth requirements than those of other mammals. (CB, ukspok)

4.3. The semantic development of *vital*

A second loan that entered the language in Middle English is *vital*. Like *essential*, it was borrowed with a descriptive meaning, and developed deontic meaning only later on. In this process, I hypothesize four stages as the result of three semantic changes. As shown in Table 13, the first stage concerns its original meaning, which is already relational, but yet non-modal. I will discuss three different subsenses; the first semantic change occurs through generalization of one subsense, specifically that in the collocation *vital parts*, which leads to the meaning of defining necessity (like *essential* in its second stage). The second semantic change leads to dynamic meaning, in which again the property of potentiality plays a key role. Like in the case of *essential*, this change takes place through extension to contexts of

evaluation and potential action. However, the chronology of the first attestations of the senses in stages 2 and 3 forces us to consider the development sketched here as merely hypothetical (cf. Van Linden 2010b: 549–554). The third change involves the development of the property of moral desirability through the process of subjectification, and leads to deontic meaning. Like in the case of *essential*, the properties of relationality and potentiality are necessary for *vital* to enter the conceptual map via dynamic meaning, and by acquiring the third property, *vital* is moved up to deontic meaning.

Table 13. The four stages in the semantic development of *vital*

Stages	→	stage 1: original meaning	stage 2: defining necessity	stage 3: dynamic meaning	stage 4: deontic meaning
Map	→	outside the conceptual map		in the conceptual map	
First attestation	→	1386	1647	1619	roughly 1990 (CB)
Meaning	→	‘associated with life or the heart’; ‘essential to life’	‘essential to’; ‘constituting the essence of’	‘indispensable for’	‘morally necessary’
relationality		+	+	+	+
potentiality		-	-	+	+
desirability		-	-	-	+

The etymology of the English adjective *vital* is not very clear according to the OED. Either it is adopted from Old French *vital*,³¹ or it is an adaptation of the Latin form *vitalis*, which is in turn based on the noun *vita*, ‘life’ (OED, s.v. *vital*). In the earliest attestations in the OED and the diachronic corpora, *vital* is used in three distinct senses. The data do not provide a decisive answer as to which sense is the original one in English, or whether these senses developed out of one another. As these questions are not immediately pertinent to the development of deontic meaning, they are not discussed in further detail.

The first attestation of *vital* dates from 1386, and has the general sense of ‘associated with life’. The OED is more specific: “consisting in, constituted by, that immaterial force or principle which is present in living beings

31 The Old French period is generally taken to last until 1350, so it possible that *vital* was borrowed from continental Old French. However, in view of the sociolinguistic situation in Britain during the Middle English period, it is more likely that *vital* was borrowed from Anglo-Norman than from Old French, if the source was not Latin (see Rothwell 1998).

or organisms and by which they are animated and their functions maintained” (OED, s.v. *vital*). The example is given in (11) below. A similar example is given in (12).

- (11) *In hise armes two The vital strengthe is lost, and al ago.*
 in his arms two the vital strength is lost, and all agone
 ‘In his two arms the vital strength is lost and all gone.’ (OED c1386 Chaucer, *Knight’s Tale* 1994)
- (12) *And thus my silf, I consume al The vertu that called is vital.*
 And thus myself, I accomplish all the virtue that called is vital
 ‘And thus myself, I accomplish all the virtue that is called vital.’
 (OED 1426 Lydgate, *De Guileville’s [G. de] Pilgrimage of the life of man* 24220)

A second sense of *vital* appears not much later in the OED data (1450), and also fits in with the ‘associated with life’ paraphrase. In this case too, a more specific definition can be posited, in which *vital* is associated with the physiology of the ancient Greek physician Galen (129–199 AC) (TLF XVI: 1210a). Building on Plato’s tripartite nature of the soul, including a vegetative, sensitive and rational soul (Knoeff 2004: 419), Galen distinguished between three systems, each of which is located in different organs and has a distinct set of virtues, operations and faculties (Siraisi 1990: 107). In later Galenic thought, these systems were termed the natural, vital and animal system, the principal parts of which were the liver, heart and brain respectively (Siraisi 1990: 107–108). Galenic physiology and pneumatology persevered into the 17th century (Forrester 2002), which is reflected in the OED data. In the Middle and Early Modern English data, *vital* is found in collocation with nouns such as *spirit(s)*,³² *blood*, *heat*, *virtue*³³ and *faculty*,

32 In Galen’s pneumatology (from Greek πνεῦμα ‘spirit’), the vital spirit(s) play(s) a special role. Galen believed that the air we inhale is converted into what was later termed ‘vital spirit’, a process which starts in the lungs and is completed in the left ventricle of the heart. This vital spirit travels along the arteries to the brain, where it is converted into the animal spirit (the Galenic “psychic pneuma”) (Forrester 2002: 200–201). Galen assumed that this conversion took place in the *rete mirabile* (‘marvellous network’), a structure of intertwining branches of the right carotid artery at the base of the brain. He had found this structure in an ox, and – wrongly – assumed it present in human beings as well (Forrester 2002). The natural spirit, which emanates from the liver, is hardly discussed in Galen’s writings, but appears in late medieval lit-

with the specific meaning of ‘associated with the heart’. In these collocations, *vital* does not attribute a gradable quality, but functions as a classifier (see section 4.2), since it denotes a specific subtype of a more general type (e.g. spirit), in opposition with *natural* and *animal*. Examples of this classifier use are given below.

- (13) *The Spirit Vitall in the Hert doth dwell, The Spirit Naturall ... the spirit vital in the heart does dwell, the spirit natural in the Liver..., but Spirit Animall dwelleth in the Braine. in the liver, but spirit animal dwells in the brain ‘The vital spirit dwells in the heart, the natural spirit in the liver, but the animal spirit dwells in the brain.’* (OED 1477 Norton, *The ordinall of alchimy* [1652] 82)
- (14) And as the science of the Anatomie meaneth, the spirite **vital** is sente from the hart to the brayne by Arteirs, and by veynes and nutritional blood, where the vessels pulsatiues be lightly hurt (PPCEME 1548 Vicary, *Anatomy*)
- (15) There ben thre faculties ... whych gouerne man, and are distributed to the hole bodye ... namely animal, **vital**, and natural. (OED 1543 Traheron, *The most excellent workes of chirurgerye made by J. Vigon*)

It can be argued that in the sense of ‘associated with life (or the heart)’, *vital* already has relational meaning (cf. Table 13) in that it evokes a relationship with ‘life’. It can be paraphrased as ‘essential to life’, with *essential* used in a defining way. *Vital strength*, for example, is a strength that is intrinsically present in life, or more precisely in living creatures and organisms. Likewise, the *vital spirit* is inherently present in life. At least in that specific *Weltanschauung*, it forms the essence of life, and every living human being has it by definition. The senses of *vital* in *vital strength* and *vital spirit* thus both involve a relationship of intrinsic inclusion.

The third non-modal sense of *vital* appears in collocations with the relational noun *part(s)*; its first example in the OED goes back to 1565. The data suggest that this collocation was used in a Galenic and a modern sense.

erature, for instance in the works of the Arabic authors Avicenna and Johannius (Temkin 1962: 104–105; Siraisi 1990: 107–108).

- 33 It can be argued that in example (12), *vital* is also used in the Galenic sense (*vital virtue*). However, I have followed the OED in assigning to it the first sense mentioned in this section, as further context is lacking to argue for a Galenic reading.

In the Galenic sense, *vital parts* referred to the organs of the Galenic vital system, i.e. the organs in the thoracic cavity and the arteries (Siraisi 1990: 107). This sense is exemplified in (16), in which the vital parts are opposed to the parts of the natural system, which were also called the ‘nourishing parts’. Again, *vital* is used as a classifier, indicating a type of parts.

- (16) There is a partition called diaphragma by the Græcians, which separateth the instruments of the **vital** partes, from the nourishing parts. (OED 1594 Bowes, *De La Primaudaye’s French academie* II. 220)

In the modern sense, the referents of the collocation are not restricted to the vital system, but also belong to the animal and natural system. In this sense, *vital* also functions as a classifier. However, it is not opposed to *natural/nourishing* or *animal*, as in the Galenic sense, but rather to *non-vital*. Vital parts are organs without which we cannot live, such as the heart, lungs, brains and liver, while non-vital parts are those which can be missed, such as the milt, uterus and eyes. This modern sense is illustrated in (17), and is clearly of a later date than the Galenic example.

- (17) The **Vital** Parts are the Heart, Brain, Lungs and Liver. (OED 1696 Phillips, *The new world of English words: or, a general dictionary* [ed. 5] s.v. *vital*)

However, both senses can be paraphrased by ‘essential to life’, with *essential* used in a defining way. According to the Galenic *Weltanschauung* on the one hand and that of modern medicine on the other, these parts are intrinsically present in life, or, in other words, without these parts, there is no life.

I hypothesize that the first semantic change of *vital* occurs through semantic generalization, in which *vital* loses its connection with ‘life’ and comes to express defining necessity (cf. Table 13). This generalization starts from its collocation with *parts*, and extends the relationship of intrinsic inclusion within ‘life’ to that of intrinsic inclusion within basically anything that is more or less compound in nature. In the data, the earliest instances of *vital* in this more general meaning of ‘essential to’ are few. Therefore, the semantic developments put forward here are not consistent with the chronology of the attestations (cf. dates of first attestations in Table 13). The hypothesis that the generalization occurred prior to rather than simultaneous with the development of potential meaning is suggested by examples in which *vital* occurs with nouns denoting abstract concepts that

are fairly homogeneous in substance, much like the relational non-potential instances with *essential* in (5) and (6) above. Examples with *vital* are given in (18) and (19). They also show structural reflections of its relational meaning: the elements to which something is said to be vital are coded by *of*-PPs (the same goes for [20] below). In addition, *vital* has become gradable, since it can combine with totality modifiers such as *absolutely* (cf. Paradis 2001: 50–53).

- (18) Their submiss Reverence to their Princes being a **vital** part of their Religion; (OED 1647 Clarendon, *The history of the rebellion and civil wars in England* I. §76)
- (19) If these he has mentioned be the substantial and **vital** parts [of his theory, OED]. (OED 1698 Keill, *An examination of Dr. Burnet's Theory of the earth* [1734] 181)

In these examples, *vital* co-occurs with the relational noun *part*, but it bears no relation to ‘life’ anymore. Instead, *vital* is used in its generalized meaning, as it refers to essential parts of a religion or theory. Arguably, *vital* is used here in a defining way, as the religion in (18) and the theory in (19) would not be the same anymore if the *vital parts* were changed or removed. Stated differently, these parts are intrinsically present in the religion or theory, and constitute their essence.

In its second semantic change, *vital* develops the property of potentiality (cf. Table 13). Like in the case of *essential*, this property – and hence, dynamic meaning – first appears in examples in which the noun to which something is said to be vital is modified by an evaluative adjective. Such adjectives signal that the predication does not apply to all instances of the type denoted by the head noun, but only to a subjectively defined subset of these (cf. section 4.2). An example is given below.

- (20) The three **vital** circumstances of a well-ordered Action, Person, Time and Place. (OED 1619 Lushington, *The resurrection rescued from the soldiers' calumnies* [1659] 70)

This example is similar to those with *essential* and evaluative adjectives, for instance in (8) above (see section 4.2). In (20), the three circumstances mentioned are essential or necessary only to a potential or subjectively defined subset of actions, namely well-ordered actions. That is, in order for an action to be regarded as well-ordered, it should be characterized by the circumstances of person, time and place. This condition-goal paraphrase suggests that the adjective *well-ordered* imposes a potential interpretation on

vital. It should also be noticed that here the relationship established by *vital* is not one of intrinsic inclusion, but one of indispensability.

Later, potential meaning is also found in expressions in which some element is said to be vital to a certain potential action. The following examples closely resemble (7) above (see section 4.2), in which *essential* is used with a potential action.

- (21) Hence it was that the raising of the siege of Gibeon ... was so **vital** to the conquest of Canaan. (OED 1856 Stanley, *Sinai and Palestine in connection with their history* iv. 215)

In (21), raising the siege of Gibeon is said to have been vital or necessary in order to conquer Canaan. Again, the condition-goal paraphrase and the SoA-internal nature of the necessity make it clear that the type of meaning involved is situational dynamic modality.

- (22) The uninterrupted working of the long and varied chain was **vital** to the welfare of the army and the success of the war. (CLMETEV 1899 Churchill, *The river war, an account of the reconquest of the Sudan*)

The same goes for (22): the continuous chain work was necessary to financially sustain the army, and ultimately to win the war. Clearly, in these expressions with potential actions, coded by *to*-PP complements, the relation that *vital* establishes is one of indispensability. We can thus assume that the meaning of *vital* has been extended from defining to dynamic necessity through patterns of co-occurrence with evaluative adjectives and potential actions, and that the adjective has entered the conceptual map in the course of the 17th century.

Alternatively, it might be argued that the collocation from which the process of generalization started (i.e. *vital parts*) provided a ‘shortcut’ to potential meaning, as it already indexes the property of potentiality. More precisely, the collocation can also be paraphrased as parts that are “necessary to life; performing the functions indispensable to the maintenance of life” (OED, s.v. *vital*). This potential element can be conceived of as an invited inference, which is later semanticized (Traugott and Dasher 2002: 34–40). Paraphrases with potential meaning can also be used for examples which are comparable to those in (18) and (19) above, but which involve more concrete noun referents that are heterogeneous in substance, like (23) and (24).

- (23) To preserve intact such **vital** parts as the machinery, magazines, and steering gear. (OED 1889 J. J. Welch, *Text Bk. Naval Archit.* 141)
- (24) Spring washers are less effective, but answer well enough for the less **vital** parts of the mechanism. (OED 1912 *Motor Man.* (ed. 14) 206)

In these examples, *vital* can be paraphrased as ‘necessary to its proper working’. However, the fact that such examples are attested rather late (i.e., after the instances with evaluative adjectives and potential actions), and the prior occurrence of defining examples such as (18) and (19) above together suggest that *vital* developed along the same lines as *essential*. Of course, the invited inference of potential meaning may have paved the way for the constructions in (20) to (22) to emerge.

The third semantic extension of *vital* leads from dynamic to deontic meaning (cf. Table 13), which is – like in the case of *essential* – aptly thought of as a case of subjectification (Traugott 1989: 35). The earliest attestation of deontic *vital* in a construction with a clausal complement dates from 1920, and is given in (25). Another example is given in (26).

- (25) It is **vital** for a leader to know what character of stance he requires in order to bring up his following safely. (OED 1920 Young [ed.], *Mountain craft* v. 218)
- (26) Police believe that the robbers ... attacked the 79-year-old third victim ... within hours of assaulting Mrs Drew. ... Detective Superintendent Roger Conway said: “The people who did it showed utter disregard for the old woman’s safety. ... It is **vital** that we catch this pair as it is quite possible that someone could die before they are done.” (CB, times)

In (25), the speaker expresses his or her idea of what he or she thinks is desirable or vital for a leader to know. In (26) the speaker thinks it is vital that the police catch the pair of robbers. In both cases, the speakers appeal to their moral opinions (moral in a wide sense) to make the assessment in terms of desirability. These examples thus show that *vital* has reached the stage of deontic meaning, and has become polysemous in the modal range of the conceptual map.

To conclude, it can be hypothesized that the development of *vital* from descriptive, premodal to deontic meaning first involved semantic generalization. The three subsenses found in the earliest attestations of *vital* all already implied a relationship of intrinsic inclusion within ‘life’, which is

motivated by the etymology of *vital* (ultimately based on Latin *vita*, ‘life’). The semantic generalization preserved this type of relationship and produced the meaning of *essential* used in a defining way. The association with ‘life’, however, got lost. In a second change, driven by patterns of co-occurrence with evaluative adjectives and potential actions, *vital* developed dynamic meaning, involving the property of potentiality and a relationship of indispensability instead of intrinsic inclusion. Like in the case of *essential*, evaluative contexts appeared prior to those with potential actions. Again, therefore, the data have shown that the properties of relationality and potentiality are the semantic conditions of entry into the conceptual map. In the fourth stage, finally, *vital* has developed the property of desirability on the basis of SoA-external arguments, and has come to express deontic meaning. Like in the case of *essential*, the process of subjectification has been invoked as the mechanism driving this final semantic change.

4.4. *Essential* and *vital*: A first pathway to deontic meaning

From the discussion of the two case-studies, it can be inferred that the similarities in the developments of *essential* and *vital* outnumber the differences. They thus allow us to posit a first pathway to deontic meaning, which is visualized in Figure 9.

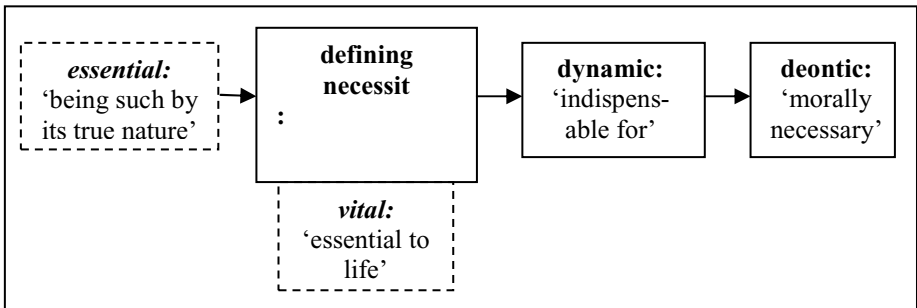


Figure 9. The first pathway to deontic meaning: *essential* and *vital*

As the figure shows, the main difference between the two concerns the beginning of the pathway. In its original meaning *essential* is non-relational, whereas *vital* does not have a non-relational stage. The first semantic change is different for both adjectives as well, but in the two cases an important role is reserved for relational nouns. In the case of *essential*, patterns of co-occurrence with relational nouns form a diachronic bridge be-

tween the original non-relational meaning and the second relational meaning. In the case of *vital*, the collocation with the relational noun *part(s)* forms the source of the semantic generalization. From the second stage onwards, the two case-studies run parallel in terms of semantic development and relative timing of the stages. Both *essential* and *vital* first develop the meaning of defining necessity before acquiring that of dynamic necessity. In addition, in both cases the development of potential meaning involves first patterns of co-occurrence with evaluative adjectives, and later contexts of potential actions. After having entered the conceptual map via dynamic modality, both adjectives undergo subjectification to become modally polysemous and move up to the space of deontic meaning. We can therefore conclude that *essential* and *vital* illustrate a first pathway to deontic meaning via the notion of defining necessity.

It could be argued that in this pathway one adjective leads the way, namely *essential*, and that the other adjective, *vital*, follows suit. This hypothesis hinges on the following three findings. In terms of relative timing, the semantic developments take place roughly simultaneously, with those of *essential* somewhat preceding those of *vital*. Secondly, in terms of the semantic properties of relationality, potentiality and desirability, *essential* shows a more complex development, as it starts from non-relational meaning and develops the three properties consecutively. *Vital* has to develop only two properties up to deontic meaning (albeit in three more stages like *essential*), and could be argued to 'join in' after *essential* has developed relational meaning. Thirdly, *essential* has developed further than *vital*, in that it can be used in non-modal evaluative expressions in Present-day English. As this use is only attested in the most recent data and in a marginal quantity, it can be assumed that it is an innovation, which is found with *essential*, but not with *vital*. We could hypothesize that *essential* might have been the model adjective for the first pathway of change, with *vital* developing analogously. In the following sections, I will present a second pathway, for which the adjectives *crucial* and *critical* are exemplary. Both pathways not only mark a development from descriptive to deontic items, but also from non-gradable to gradable items.

4.5. The semantic development of *crucial*

The adjectives of the second pathway to deontic meaning came later into the English language than those associated with the first pathway. The first adjective discussed here is *crucial*, which was borrowed in the 18th century. Like *essential* and *vital*, it was borrowed as a non-modal adjective, and

later developed deontic meaning. In its development, four stages can be recognized, which are, however, not as clear-cut as is the case for *essential* and *vital*. Table 14 hypothesizes what these stages may look like (cf. Van linden, Verstraete, and Cuyckens 2008: 240–244).

Table 14. The five stages in the semantic development of *crucial*

Stages	→	stage 1: original meaning	stage 2: metaphorized meaning	stage 3: col- locational meaning	stage 4: dynamic meaning	stage 5: deontic meaning
Map	→	outside the conceptual map		‘at the doorstep’	in the conceptual map	
First attestation	→	1706	1830	1830	1869	roughly 1990 (CB)
Meaning	→	‘cross- shaped’	‘like (at) a finger-post’	‘necessary to decide between two hypotheses’	‘decisive for’; ‘important for’	‘morally neces- sary’
relationality		-	-	+	+	+
potentiality		-	-	+	+	+
desirability		-	-	-	-	+

The distinction between the second and third stage is not hard and fast. In fact, these two stages coincide temporally due to the first semantic change, which is a metaphorical projection. In the table, I have untwisted these stages to be able to assign the same configuration of semantic properties to the source and target meaning of the metaphor. The second change involves semantic generalization and leads to the development of dynamic meaning (cf. Van linden 2010b: 555–558). The third change, driven by subjectification, leads to deontic meaning. Again, the development of deontic meaning will be described in terms of the semantic features of relationality, potentiality and desirability.

Crucial is of Romance origin. According to the etymology given in the OED, it was borrowed from French into English in the early 18th century with the meaning of ‘cross-shaped’ or ‘in the form of a cross’ (OED, s.v. *crucial*). The French word *crucial* itself is formed on the Latin noun *crux* ‘cross’ and appeared in French medical texts in the 16th century (e.g., in *section cruciale*), also in the sense of ‘cross-shaped’ (Malgaigne 1840–1841, as cited in TLF VI: 559a). The first attestations of *crucial* in the OED are given below. Clearly, they are also taken from medical texts.

- (27) **Crucial** Incision, the cutting or lancing of an Impostume or Swelling cross-wise. (OED 1706 Phillips, *The new world of English words: or, a general dictionary* [ed. Kersey] s.v. *Incision*)
- (28) The bursal and **crucial** ligaments were in their natural order. (OED 1751 *Phil. Trans.* XLVII. xxxvii. 261)

In both (27) and (28), *crucial* functions as a classifier. In (27), it designates a specific type of incision in the form of a cross, as opposed to a linear incision. In (28), *crucial* indicates a sub-class of ligaments, i.e. those in the knee-joint, which cross each other in the form of a Saint Andrew's cross and connect the femur and tibia, as opposed to the bursal ligaments, which cross the bursa (OED, s.v. *crucial* and *bursal*). In both cases, *crucial* denotes a subtype of the general type of the head noun, and does not assign a gradable quality to the NP referent. More generally, the OED database does not include any predicative or graded uses of *crucial* in its original meaning. In the sense of 'cross-shaped' or 'cross-like', *crucial* clearly is non-relational, since it does not link two concepts, as well as non-potential, since it does not involve a potential event or the potential presence of an entity, and it does not involve a notion of desirability, but merely an indication of the shape of an entity (cf. Table 14).

The first semantic change of *crucial* on its way to deontic meaning involves metaphorical projection. It is generally agreed that the basis of this metaphorical extension had been laid in the work of Francis Bacon (1561–1626) (OED, s.v. *crucial*; FEW II2: 1382b; TLF VI: 559; Klein 1971: 178; Barnhart 1988: 238a). In his influential *Novum Organum* ('new instrument', 1620), written in Latin, Bacon coined the phrase *instantia crucis* 'crucial instance', which he explained as a metaphor derived from crosses that are placed at bifurcations of the road and specify where each road will lead. Crucial instances are places where the scientist or thinker in general has to make a decision, as much as finger-posts are places where the traveller has to determine which way to go³⁴ (the Latin word *crux* at that time had developed the meaning of 'a guidepost that gives directions at a place where one road becomes two' [OED, s.v. *crucial*; FEW II2: 1380a]; the

34 It can be argued that this metaphor has a metonymical basis, as the instances in question are not cross-like, but rather situated at crosses posted at bifurcations of the road. This relation of spatial contiguity thus serves as the base for the metaphor, which is in keeping with Barcelona's claim that the target and/or the source of a potential metaphor "must be *understood* or *perspectivized* metonymically for the metaphor to be possible" (Barcelona 2000: 31; emphasis his).

question of whether the emergence of the metaphorized meaning in English is a language-internal development or the result of another borrowing does not concern us here). Bacon thus mapped the more concrete domain of travelling onto the more abstract domain of thinking. Robert Boyle (1627–1691) and Isaac Newton (1642–1727) built on this metaphor and used the term *experimentum crucis* to refer to the experiment carried out to decide between two rival hypotheses (OED, s.v. *crucial*). Even though the works of the scientists mentioned were written in the 17th or early 18th century (some in Latin), the specific phrases with the adjective *crucial* appeared in English in the 19th century only.³⁵ The earliest example is given in (29) below.

- (29) What Bacon terms **crucial** instances, which are phenomena brought forward to decide between two causes, each having the same analogies in its favour. (OED 1830 Herschel, *A preliminary discourse on the study of natural philosophy* II. vi. 150)

The definitions of *crucial instance* (in [29]) and *crucial experiment* (described above) indicate that these fixed phrases have relational and potential meaning as a whole, since the consideration of a ‘finger-post-like’ type of instance or the performance of such a type of experiment is necessary in order to choose between rival hypotheses, and ultimately to resolve the intellectual crisis. (Note that *crucial* functions as a classifier of its collocates.) It can be argued that it is only in the specific collocations with *instance* and *experiment* that *crucial* has relational and potential meaning, which is a further reason why Table 14 distinguishes between stages 2 and 3. In any case, the condition-goal paraphrases imply that the collocations involve dynamic situational necessity, just like *essential* and *vital* in their third stage of semantic development.

The second semantic change allows *crucial* to meet the entry conditions for the conceptual map. It takes place when the use of *crucial* is extended to other contexts than the collocations with *instance* and *experiment*, and concomitantly, the specific meaning of ‘necessary to decide between two hypotheses’ is generalized to ‘decisive for’ or ‘important for’ (cf. Table 14).

35 The Latin phrases appeared in earlier scientific or philosophical English writings, e.g., *The gradual removal of these suspicions at length led me to the Experimentum crucis* (OED 1672 Newton, *Light & Colours* i); *The Experimentum crucis or that Experiment, which points out the Way we should follow, in any Doubt or Ambiguity* (OED 1751 Hume, *An enquiry concerning the principles of morals* V. ii. 84).

While *crucial* only has this specific sense in the collocations with *instance* and *experiment*, in which it functions as a classifier, it retains the broader meaning of ‘important’ or ‘decisive’ when used in modifying other nouns. Semantically, in such other contexts, it is *crucial* itself that has relational and potential meaning, and not the combination of adjective and noun. This is structurally reflected by the occurrence of complements (see [30]–[31]). Syntactically, it no longer functions as a classifier, but as an attribute: it is gradable, and it can be used predicatively (see [31]). The semantic generalization of *crucial* is illustrated in (30). Even though it modifies the noun *experiments*, we can argue for a general attribute reading, since the potential action to which the experiments are said to be crucial needs to be expressed; if *crucial experiments* had been used in its specific collocational sense, the *for*-complement would have been redundant. The relationship established by *crucial* is one of decisive importance or determining influence.

- (30) **Crucial** experiments for the verification of his theory. (OED 1869 Martineau, *Essays philosophical and theological* II. 134)

Like in the case of *essential* and *vital*, potential contexts such as in (30) are a prerequisite for dynamic and later on deontic modal meaning. A similar example is given in (31) (see also section 1.2.1, example [19]).

- (31) It is **crucial** that the blocking device ... is deposited at this point to ensure that the tubes are rendered impassable. (CB, times)

In (31), which features an extraposed *that*-clause, the blocking device has to be deposited at a particular point in order to ensure that the fallopian tubes are rendered impassable. The action of depositing is necessary on SoA-internal grounds, i.e. for the proper blocking of the tubes (in a sterilization operation). Examples (30) and (31) show that after metaphorical projection and semantic generalization *crucial* can be used in dynamic utterances expressing a situation-internal necessity. It has thus entered the conceptual map, as it has met the entry conditions of relationality and potentiality.

Whereas in (30) and (31) actions are described as crucial or necessary on the basis of SoA-internal arguments, deontic utterances need an attitudinal source who assesses an action as morally necessary on SoA-external grounds. Such expressions are only found in Present-day English. The following examples show that in its final semantic extension, *crucial* is moved

up in the conceptual map to reach the space of deontic meaning (cf. Table 14).

- (32) It is important to try and construct a policy and practice that not only listens to children, but seriously takes account of their wishes The establishment of childline is perhaps the clearest example. It is **crucial** to structure the practice in a way that includes children in the decision-making. (CB, ukbooks)
- (33) Speaking about national model syllabuses for Religious Education, Mr Patten said “The preparation of local syllabuses is not an easy task, but a vital one. It is **crucial** that this debate keeps moving forward to questions on ... the best way to combine education rigour with the necessary freedom for spiritual enquiry.” (CB, uk-mags)

In (32), the speaker (attitudinal source) argues that it is desirable or morally necessary to structure the practice of childline in such a way that includes children in the decision-making. In (33), the speaker (Mr Patten) argues that it is desirable or morally necessary to come to a consensus on the curriculum of Religious Education. As the meaning of *crucial* in these cases is based in the speaker’s (moral) attitude towards the proposition, more than it is the case in the earlier dynamic expressions, we can again appeal to subjectification. We can therefore conclude that *crucial* has become modally polysemous in the course of the 20th century, belonging to both the spaces of dynamic and deontic modality in the conceptual map.

In summary, in its development from premodal to deontic meaning, the French loan *crucial* starts with the non-relational and non-potential meaning of ‘cross-shaped’. It develops both types of meaning at once through metaphorical projection, brought about by Bacon’s collocation *crucial instance*. In a process of semantic generalization, *crucial* loses the specific collocational meaning of ‘necessary to decide between two hypotheses’, and comes to mean ‘decisive for’. In this meaning, it conveys dynamic necessity, like *essential* and *vital* in their third stage of development. Deontic utterances, however, require the presence of an attitudinal source assessing an action as desirable on SoA-external (moral) grounds. The semantic extension of *crucial* to deontic meaning involves subjectification as well, and is found only in Present-day English.

Like the previous case-studies, the study of the semantic development of *crucial* lends further support to the diachronic applicability of the conceptual map. Again, the first type of modal meaning that the adjective acquires is of the situational dynamic subtype. The conditions of entry into this type

of meaning and, more generally, into the conceptual map, are the semantic properties of relationality and potentiality. In a later stage, *crucial* is moved up to the deontic space, and thus becomes modally polysemous. Like *essential*, however, *crucial* is also very marginally found in expressions which do not involve an assessment of a potential or tenseless SoA, but rather of a proposition (involving a tensed SoA). In expressions like (34), *crucial* seems to convey non-modal evaluative meaning, located in the highest conceptual space in the map.

- (34) I mean say she'd gone in not to room forty-three but room forty-four you know as she herself said she probably would have lasted fifteen seconds in there. But she knows er I mean it it's **crucial** as well that he's pissed it's **crucial** that he's he's he's a drunk because a girl like Rita would walk through the door see that and know that there was another insecurity and another victim there right and that would give her the strength to stay in the room. (CB, ukspok)

Like in the case of *essential*, I refer to section 6.4.1 for a more detailed discussion of the development of this type of meaning. We can conclude here that the semantic development of *essential* and *crucial* can be described as an upward movement through all the spaces of the conceptual plane of the map.

4.6. The semantic development of *critical*

The last strong adjective whose semantic development will be investigated in detail here is *critical*. It was borrowed into English in the 16th century with non-modal, descriptive meaning, and developed deontic meaning only in the 20th century. In this process, I propose, three stages can be distinguished as the result of two distinct semantic changes. The first change involves semantic generalization and leads from its original meaning to dynamic meaning. As indicated in Table 15, this change does not involve a shift in the configuration of the semantic properties of relationality and potentiality (cf. Van Linden 2010b: 558–561). The second change is that from dynamic to deontic meaning, again through subjectification. It will become clear that the development of *critical* has much in common with that of *crucial* discussed above. As in the three other case-studies, the semantic changes discussed below will be related to the semantic properties of relationality, potentiality and desirability.

Table 15. The three stages in the semantic development of *critical*

Stages	→	stage 1: original meaning = collocational meaning	stage 2: dynamic meaning	stage 3: deontic meaning
Map	→	‘at the doorstep’	in the conceptual map	
First attestation	→	<i>critic</i> : 1544 <i>critical</i> : 1601	(1664) roughly 1990 (CB)	roughly 1990 (CB)
Meaning	→	‘necessary to determine the direction of the disease’	‘decisive for’; ‘important for’	‘morally necessary’
relationality		+	+	+
potentiality		+	+	+
desirability		-	-	+

Critical is attested in English for the first time in 1590, as a derivation of the now obsolete adjective *critic* (OED, s.v. *critical*). According to the OED, this last form is an adaptation of the Latin adjective *criticus* (OED, s.v. *critic*). Although Latin may be the immediate source language, the Latin form itself is based on the Greek adjective κριτικός (‘able to judge’, ‘decisive’), which in turn derives from the verb κρίνειν (‘judge’, ‘decide’, ‘separate’) (Barnhart 1988: 236a). Around the end of the 16th century, English *critical* has two distinct meanings. One relates to the act of judging, and can be paraphrased by ‘given to judging’, especially ‘given to adverse or unfavourable criticism’ (OED, s.v. *critical*). Its first attestation in the OED comes from Shakespeare’s *Midsummer Night’s Dream*, and is given in (35). In its second sense, illustrated in (36), *critical* is a medical term and pertains to the crisis or turning point of a disease (OED, s.v. *critical*; Barnhart 1988: 236a). This sense is also the meaning of *critic* in its first attestation, which is given in (37).

- (35) That is some Satire keene and **criticall**. (OED 1590 Shakespeare, *A midsommer nights dreame* V. i. 54)
- (36) Who will say that the Physition in his iudgement by vrine, by indicatorie and **criticall** daies, by Symptomes and other arguments ... doeth intrude into the secret prouidence of God? (OED 1603 Heyden, *An astrological discourse in justification of the validity of astrology*. i. 19)
- (37) If it [‘jaundis’, OED] appeare in the vj day, beyng a day iudiciall or **creticke** of the ague [i.e. an acute or violent fever, AVL]. (OED 1544 Phaer, *Goeurot’s Regiment of life* [1553] Gjb)

Since the sense of *critical* in (35) does not play any role in its semantic development of deontic meaning, I will not discuss it in more detail. The medical sense of *critical* (and *critic*), however, did play an important part in the development of deontic meaning, and it is taken here as the first stage (cf. Table 15).³⁶ This sense originates in the works of Hippocrates (c460–377 BC), and refers to a changing point of a disease, a “sudden change for better or worse” (Liddell et al. 1951 [1924]: i 997a). Such a crisis usually comes with sudden excretions of “bad humours”, for instance through heavy sweat during fever, vomiting, diarrhea or menstruation (Siraisi 1990: 135). Hippocrates also introduced the concept of ‘critical days’ (κρίσιμοι ἡμέραι) as a prognostic tool (cf. [36]–[37]),³⁷ with which he referred to days on which the illness reached a crisis, and “which afforded and required a judgement (also κρίσις) about its direction” (Demaitre 2003: 768).

In his works *De crisi* and *De diebus ceticis*,³⁸ Galen furnishes the Hippocratic doctrine of critical days with a theoretical – astrological – foundation. He proposes that critical days need to be calculated on the basis of a “medicinal month”, which derives from the orbit of the moon (Siraisi 1990: 135). Critical days come with certain regularity; that is on days 7, 14, and 20 of the medicinal month (Cooper 1999: 8). Since Galen, therefore, the meaning of *critical* in the collocation *critical days* also has an astrological component. Moreover, several studies have demonstrated that the Galenic idea of iatromathematics or astrological medicine has been kept in use throughout the Middle Ages (e.g. Demaitre 2003), the Early Modern period (e.g. Roos 2000), and even the Late Modern period (e.g. Harrison 2000).

36 It is also in this sense that the adjective was borrowed first into Latin and later into French, English and German (FEW II2: 1354b–1355b; Koselleck 2006: 358–363). It should be noted, however, that in this medical sense, *critic(al)*, or rather, Latin *criticus*, goes back to the Greek adjective κρίσιμος (‘decisive’, ‘critical’), the meaning of which is mentioned as one of the various senses of κριτικός (Liddell et al. 1951 [1924]: i 997a). In the work by Galen, for instance, κριτικός is typically used in the sense of κρίσιμος (Durling 1993: 211). This last adjective is derived from the Greek noun κρίσις (‘judgement’, ‘crisis’), which had rather distinct meanings in the legal, medical and theological sphere. From antiquity up to the Early Modern period, however, the technical medical sense predominated (Koselleck 2006: 358).

37 This concept assumes a linear but dynamic view of illness. In his *De crisi*, Galen standardizes this view by introducing four stages of a disease: the onset, increase, status and decline. In addition, a disease underwent recurrent fluctuations or “periods” (cf. Demaitre 2003: 768).

38 Galen’s work *De diebus ceticis* (‘On critical days’) is also referred to as *De diebus decretoriis* (e.g. Cooper 1999).

Hence, it is not surprising that the first attestations of *critic(al)* in its medical (and astrological) sense typically collocate with *days*, as in (36) and (37) above. Some other examples are given below.

- (38) The Moone passeth almost euey seuenth day into the contrary signe of the same quality and bringeth the **criticall** daies. (OED 1602 Vaughan, *Nat. Direct.* 47)
- (39) Another time is called Intercidental, which is a time falls out between the Judicial dauyes and **Critical**. (OED 1651 Culpepper, *Semeiotica Uranica* 22)
- (40) The medecall month; introduced by Galen ... for the better compute of Decretory or **Criticall** dayes. (OED 1646 Browne, *Pseudodoxia epidemica* IV. xii. 213)
- (41) If the Moon upon a **Critical** day be well aspected of good Planets, it goes well with the Sick. (OED 1671 Salmon, *Synopsis medicinae*, II. xv. 183)

In collocation with *day(s)*, *critical* functions as a classifier, denoting a specific subtype of day, rather than assigning a gradable quality to its referent. Another adjective referring to the same subtype is *decretory*, as in (40) (cf. note 38). The types of day *critical* or *decretory* ones are opposed to are *intercidental* and *judicial* days, as in (39). As explained in (39), the *intercidental* days are the ones that fall between the *judicial* and *critical* days (cf. OED, s.v. *intercident*). The *judicial* days are sometimes called *indicator* days, as in (36), and are the days on which the physician has to pay special attention to the symptoms (e.g. rhythm and strength of the pulse and the composition of bodily secretions) in order to be able to decide the direction of the upcoming crisis (i.e. days 4, 11 and 17 of the medicinal month, cf. Cooper 1999: 7–8). In some accounts, however, *judicial*, is used as a synonym of *critical* and *decretory*, as in (37) (see also OED, s.v. *judicial*).

The description of *critical days* above has shown that this fixed phrase has relational and potential meaning as a whole (cf. Table 15), just like the phrases *crucial instance* and *crucial experiment* in section 4.5. In fact, *critical days* can be paraphrased as days that are necessary to determine the direction of the disease, just like a *crucial experiment* is necessary to determine the ‘direction’ of a scientific theory. This condition-goal paraphrase shows that the collocation studied here implies situational dynamic meaning.

The first semantic change of *critical* in its development to deontic meaning involves semantic generalization through the expansion of the host-class. The data indicate that the use of *critical* is extended from the

technical medico-astrological sense relating to the crisis of an illness to the more general meaning of ‘decisive for’ or ‘important for’ when modifying other nouns, just like *crucial* after its semantic generalization. In this generalized sense, it is *critical* itself that has relational and potential meaning, and not *critical* in combination with the noun it modifies. What is described as *critical* has a decisive bearing on the following course of events or, put differently, will determine the outcome of the matter talked about. The relationship established by *critical* is therefore one of decisive influence or determining importance. The semantic generalization of *critical* has structural corollaries in that it is able to take complements (see [43]–[45] below) – unlike in its collocational sense, as has been observed for *crucial* (cf. section 4.5). Syntactically it does not take up the function of classifier anymore, but rather that of attribute, since it can be graded, as exemplified in (42), and allows predicative alternation, as shown in (43) to (45).

- (42) Acquaint them [tender-plants, OED] gradually with the Air for this change is the most critical of the whole year. (OED 1664 Evelyn, *Kalendarium hortense* [1729] 198)

In (42), *critical* is modifying *this change* (probably the change between two seasons) and it is graded. The adjective here means ‘decisive for’, but arguably the sense of necessity is not that clearly present. It is significant that in the data all Early and Late Modern English examples are similar to (42), with *critical* being predicated of a special occasion or a particular period of time (see section 4.7). In fact, it is only in Present-day English that *critical* appears in expressions in which the sense of necessity is foregrounded as well, as in examples (43) to (45).

- (43) The short scenes are **critical** to providing continuity and maintaining suspense and eye-catching details include flickering/strobe lighting and even silhouetted shadows for the bedroom scene at the, ahem, “climax” of the play. (CB, ukmags)
- (44) Nepal and Bhutan are among the poorest half dozen nations in the world and support from India has been **critical** to their survival in the past. (CB, bbc)
- (45) The demands imposed by Formula One are greater than ever, he says, keeping drivers “on the limit”. The cars too, have become more difficult to handle: “It is **critical** to get the set-up right because it is so easy to lose it in a big way.” (CB, times)

In (43), the use of short scenes is critical or necessary to provide continuity and maintain suspense in the play. This condition-goal paraphrase, characteristic of dynamic meaning, also applies to (44). Here, the support of India has been critical or necessary for the poor nations of Nepal and Bhutan to survive. In (45), getting the set-up of a Formula One car right is critical or necessary to take a good start in a race (and eventually, to win the race). Note that in (45), the condition is coded by a clausal complement. In all these cases, some action is viewed as critical or necessary to the accomplishment of a certain goal, on the basis of SoA-internal grounds. These examples convey situational dynamic meaning, and hence show that *critical* has entered the conceptual map from below, much like *essential*, *vital* and *crucial*.

Like the adjectives dealt with in the preceding case-studies, *critical* is modally polysemous in Present-day English, in that it can not only express dynamic, but also deontic meaning. The extension from dynamic to deontic meaning takes place only in Present-day English (cf. Table 15). Deontic examples are given below.

- (46) “The most important thing is to sharpen the focus of the young generation so that they are better able to identify racism and totalitarianism in its early stages,” he said. “In the battle against this fundamental evil of the twentieth century, it is absolutely **critical** to mount a timely resistance.” (CB, times)
- (47) We operate a network of highly trained Child Protection Teams, centres and projects to help and protect children who have been seriously abused or tragically neglected. It’s **critical** that these services go on being funded. (CB, ukephem)

In (46), the speaker thinks it is critical or morally necessary to mount resistance against racism and totalitarianism in youngsters rather early (see also section 2.1, example [8]). In (47), the speaker thinks it is critical or morally necessary that teams helping and protecting abused or neglected children should continue to receive funding. In both cases, the speakers appeal to their moral (SoA-external) principles to indicate the necessity of the SoAs. As the meaning of *critical* is based here on the moral attitude of the speakers towards the SoA, rather than on SoA-internal grounds, the final change, or rather extension, from dynamic to deontic meaning can again be captured in terms of subjectification.

It should be noted that in its deontic meaning *critical* is still gradable, since it can combine with the totality modifier *absolutely*, like in (46). The other adjectives studied here are gradable in their deontic uses as well, just

like in their dynamic uses. However, in their extension from dynamic to deontic meaning, the adjectives change in the type of opposition they imply (cf. Paradis 2001: 51–54). In their dynamic meaning, the adjectives are complementaries, “conceptualized in terms of ‘either ... or’” (Paradis 2001: 52) (either necessary or not necessary/avoidable). In their deontic meaning, by contrast, the adjectives are antonymic and they imply a scale (in this case one of [moral] desirability), on which they appear at one extreme (with at the other end adjectives such as *unacceptable*) (see section 2.1). According to the typology of gradable adjectives proposed in Paradis (2001: 51–54), the strong adjectives thus change from ‘limit adjectives’ to ‘extreme adjectives’, which is a shift from non-scalar to scalar. Therefore, they confirm Paradis’s (2001: 58) finding that adjectives tend to get scalar interpretations. Of course, this finding is related to the binary and scalar nature of dynamic and deontic modality respectively, as discussed in section 1.2.1 and taken up again in section 8.3.4.

In conclusion, *critical* developed dynamic modal meaning from its original medical-astrological meaning through semantic generalization. Its specific meaning of ‘necessary to decide on the direction of the disease’, in collocation with *days*, extended to the more general meaning of ‘decisive for’. Both stages involve relational and potential meaning. In the dynamic modal stage, the meaning of *critical* closely resembles that of *crucial* in its fourth stage. It should be noted, though, that it is only in Present-day English that *critical* is used in clearly dynamic expressions, in which the necessity of SoAs is indicated on SoA-internal grounds. In its third and final stage (also in PDE), the meaning of *critical* involves an attitudinal source who assesses an SoA as desirable on SoA-external grounds. For the extension from dynamic to deontic meaning, we again invoked the process of subjectification.

This final case-study on the semantic development of *critical* is in keeping with the previous case-studies as regards its contribution to the proposed conceptual map. Like the other studies, it offers further arguments in support of the map’s validity for diachronic analysis. *Critical* enters the conceptual map via dynamic modality, having met the entry conditions of relational and potential meaning. In a later stage, *critical* develops a second type of modal meaning, namely deontic meaning, and hence becomes modally polysemous. In the conceptual map, it is moved upwards from the lowest to the middle conceptual space. Unlike *essential* and *crucial*, *critical* does not occur in constructions with propositional complements; its use is restricted to the two modal categories in the conceptual map.

4.7. *Crucial* and *critical*: A second pathway to deontic meaning

The case-studies on *crucial* and *critical* suggest that their semantic developments to deontic meaning bear a close resemblance. They can be integrated into a single pathway to deontic meaning, as shown in Figure 10.

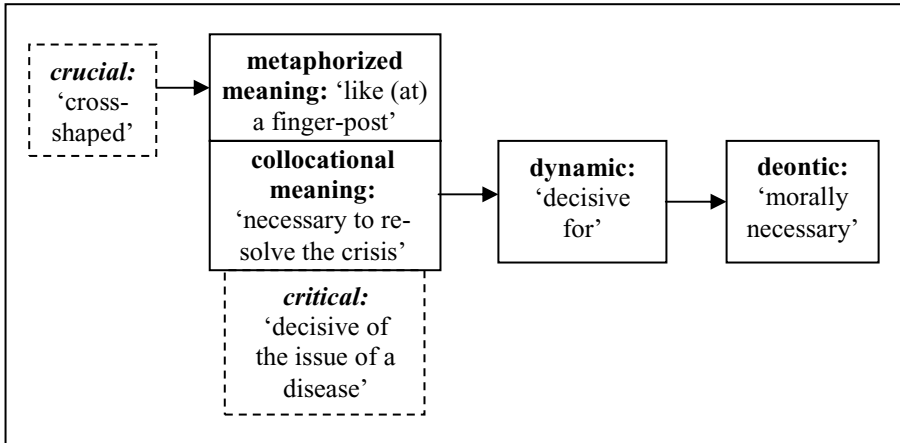


Figure 10. The second pathway to deontic meaning: *crucial* and *critical*

Like in the case of the first pathway, the main dissimilarities between the two adjectives relate to the initial stages of the respective developments. *Crucial* was first subject to metaphorical projection before it could be used in its collocational meaning (as in *crucial experiment*), whereas with *critical* the stage of collocational meaning (*critical days*) corresponded with its original stage. Importantly, in both cases the collocational stage evokes the notion of a crisis or turning point. In the case of *crucial*, the crisis pertains to the development of a scientific theory, while in the case of *critical*, the crisis pertains to the development of a disease. From the stage of collocational meaning onwards, the semantic developments of *crucial* and *critical* run completely parallel. In both cases, the semantic change to the next stage involves generalization, through which the adjectives themselves come to express relational and potential meaning, rather than the whole noun phrase they occur in. Semantically, the type of relationship they establish relates to the notion of a crisis, and can be paraphrased as ‘decisive for’. This change also has structural reflections in that the adjectives can take complements (unlike in their collocational stages) (cf. *vital* in its generalized meaning, see section 4.3). Syntactically, the adjectives no longer serve the function of classifier, but of gradable attribute, which allows for totality modifiers

and predicative alternation. In this stage, *crucial* and *critical* can be used in dynamic constructions that express necessity inherent in a situation. The case-studies thus show that like in the case of *essential* and *vital*, the properties of relationality and potentiality can be seen as the entry conditions for the conceptual map via dynamic meaning. Finally, both adjectives can be used in deontic expressions, which indicates that the dynamic meaning has been subjectified to express desirability grounded on the attitudinal source's own moral principles. We can therefore conclude that *crucial* and *critical* illustrate a second pathway to deontic meaning via the notion of a crisis, which differs from the first pathway exemplified by *essential* and *vital*, involving the notion of defining necessity.

Again it could be argued that in this pathway one adjective, namely *crucial*, may have been exemplary for the other, *critical*. Once more, three types of evidence can be advanced. Let us first take a look at the relative timing of the stages in the semantic developments. Although it cannot be denied that *critical* entered the English language before *crucial*, it seems reasonable to assume that *crucial* leads the way in the development of deontic meaning. The main argument here relates to *critical*'s four-century interval between the collocational meaning of *critical days*, which indexes relationality and potentiality, and the first clear-cut examples of dynamic meaning, which involve necessary conditions for a particular SoA-internal goal. This interval might indicate that *critical* took the example of *crucial*, which had acquired dynamic meaning by the end of the 19th century, to develop dynamic meaning itself only in the 20th century. Second, when we look at the semantic properties of relationality, potentiality and desirability, we see that the pathway established by *crucial* is more complex than that of *critical*. Like the model of the first pathway (*essential*), *crucial* starts from non-relational meaning and develops the three properties to arrive at deontic meaning. *Critical*, by contrast, has to develop only one property up to deontic meaning, and can thus be argued to catch up after *crucial* has developed relational and potential meaning through the processes of metaphorical projection and semantic generalization. Third, the two adjectives of the second pathway also differ in their current endpoint of semantic development. Like *essential*, *crucial* has gone one step further than deontic meaning, as it is used in non-modal evaluative expressions in Present-day English, albeit very infrequently. On the basis of these three findings, we might assume that the second pathway to deontic meaning has *crucial* as its model, and that *critical* has developed analogously.

4.8. Adjectival pathways to deontic meaning

If we compare the semantic development of the strong adjectives studied above with what we know about modal verbs like *can*, *may* and *must*, there are some obvious similarities, but also a range of interesting differences. The clearest similarity is in the last phase of development: in both cases, deontic meanings are subjectifications of earlier dynamic types of meaning. However, the type of dynamic meaning involved differs. Whereas in Germanic languages the modal auxiliaries first undergo micro-changes within the dynamic domain from participant-inherent (ability) to participant-imposed meaning before developing deontic meaning (e.g., Van Ostaeyen and Nuyts 2004: 113) (cf. section 1.2.2),³⁹ the adjectives studied here develop only one type of dynamic meaning which leads to deontic meaning, specifically situational meaning. In both cases, the process of subjectification re-orientates the property of necessity from the situation (necessity imposed by or internal to a particular situation) to the attitudinal source (necessity as assessed by someone, typically the speaker, on the basis of SoA-external, moral principles). It should be noted, though, that subjectification is a semantic process that does not systematically correlate with certain formal or structural properties. The diachronic analysis presented here therefore suggests that the distinction between dynamic and deontic modal meaning may not always be clear-cut, unlike the other steps of the development. I will return to this problem of delineation between the two modal categories in the conceptual map in section 8.3.4. In any case, even though the adjectives belong to a different register than the modal auxiliaries because of their non-native origin, they do conform to the dynamic-deontic pathway noted for the verbal category (e.g. Bybee, Perkins, and Pagliuca 1994: 191–194; Goossens 1999; Traugott and Dasher 20002: Ch. 3).

What is even more interesting than the dynamic-deontic development, is the stages from premodal to modal meaning. It is especially in this subarea that the study of adjectives fills a gap in the literature (cf. Van linden 2010b). It has been shown that with adjectives the development of situational dynamic meaning is a question of the properties of relationality and potentiality. Relationality is needed to turn the adjective into a predicate of necessity that can link two concepts, for instance a part and whole, or a

39 In their diachronic study of the Dutch modal *kunnen* ('can'), Van Ostaeyen and Nuyts (2004) argue on the basis of the distribution of ambiguous cases that deontic meaning seems to have developed from participant-imposed dynamic meaning, and epistemic meaning from situational dynamic meaning (2004: 52).

condition and goal. Accordingly, it was found that relational meaning is the semantic condition for complementation and a prerequisite for the development of potential meaning. Potentiality, in turn, is needed to ensure that the relationship established by the adjective is one of indispensability or decisive influence rather than intrinsic inclusion, and hence, that the necessity involved is dynamic-modal rather than defining. As suggested above, we can therefore conclude that the semantic properties of relationality and potentiality are the conditions of entry into the conceptual map, or, more precisely, that they are the conditions for the strong adjectives studied here to enter the space of situational dynamic meaning.

The case-studies presented here also show some considerable differences in the development of these properties. Although in their original stages, all adjectives function as classifiers, they differ in terms of the configuration of semantic properties. Specifically, *essential* and *crucial* start off with non-relational and non-potential meaning, whereas *vital* starts off with relational meaning and *critical* even with both relational and potential meaning. The case-studies have demonstrated that the factors driving the emergence of relationality can be quite different: patterns of co-occurrence with relational nouns in the case of *essential*, as opposed to metaphorical projection, metonymy and semantic generalization in the case of *crucial*. For the emergence of potential meaning, the same mechanisms were invoked in the case of *crucial*, whereas in the case of *critical*, only the mechanism of semantic generalization (through expansion of the host-class) applied. In the cases of *essential* and *vital*, by contrast, potential meaning emerged through patterns of co-occurrence with evaluative adjectives and potential actions. These mechanisms all point to the importance of constructions in the development of a certain lexical item. We can conclude that the developments of the properties of relationality and potentiality, which themselves are new in the diachronic research of modal categories, involve more general mechanisms of change which are not that new, but have already been appealed to for a varied set of semasiological extensions in various conceptual domains (cf. Geeraerts 1997: 93–102).

Still with respect to the properties of relationality and potentiality, the case-studies indicate that they function on different levels: the development of relationality seems to be mainly a lexical matter, while the development of potentiality seems to take place on a constructional rather than a lexical level. In the cases of *essential* and *crucial*, for example, the change from non-relational to relational meaning involves the largest semantic leap (from meanings that do not involve necessity to meanings that do). Moreover, the emergence of relationality precedes the development of the other properties, most clearly so in the semantic extension of *essential* and *vital*.

The changes involving potential meaning, and further on to deontic meaning, by contrast, imply smaller semantic developments (from one type of necessity to another).

In general, the semantic developments of the strong adjectives studied here have presented arguments in support of the validity of the conceptual map for diachronic analysis: its three conceptual categories are diachronically ordered. In the four case-studies, the first type of modal meaning that the adjectives develop is dynamic, more specifically of the situational subtype. In a later stage, they develop deontic meaning, and thus become polysemous in the modal range of the map. In Present-day English, two adjectives – *essential* and *crucial* – even arrive at the highest space of non-modal attitudinal meaning, albeit in just a few cases. Clearly, this marginal development is a further difference with the diachrony of modal auxiliaries, as the latter are never found in non-modal attitudinal expressions (see section 2.3 on the division of labour among the various formal types of expressions). This chapter therefore has revealed the diachronic relations between the conceptual categories expressed by the modal-evaluative adjectives.

Moreover, the case-studies have presented two distinct pathways to deontic meaning, which form telling examples of the way in which original meaning shapes future changes. One pathway involves the notion of defining necessity and is followed by *essential* and *vital*. The second pathway involves the notion of a crisis, and is followed by *crucial* and *critical*. These two pathways of change and their upward movement in the conceptual map are represented in Figure 11 below.

From a broader perspective, the two pathways can also serve as the basis of a more elaborate typology of pathways to deontic meaning. In the four case-studies, a few concepts were introduced that may prove helpful in further examination of the diachrony of modal categories, such as the semantic features of relationality, potentiality and desirability. Apart from the borrowed adjectives discussed in this chapter, it may be interesting to look at native adjectives also, such as *needful*, which may present us with yet other pathways to deontic meaning (from ‘poor, needy’ over ‘necessary, indispensable’ [OED, s.v. *needful*] to ‘morally desirable’). It is hoped that future research can expand this preliminary typology of adjectival paths to deontic meaning. However, before we can build on this typology, we need to strengthen its foundations by adducing quantitative evidence for the developments proposed in this chapter, drawn from larger datasets. In this respect, I believe it is systematic coverage of the 20th century that is most urgent, for example by use of the ‘Brown family’ of corpora (cf. Leech et al. 2009), or Davies’s TIME Corpus (cf. Davies forthcoming).

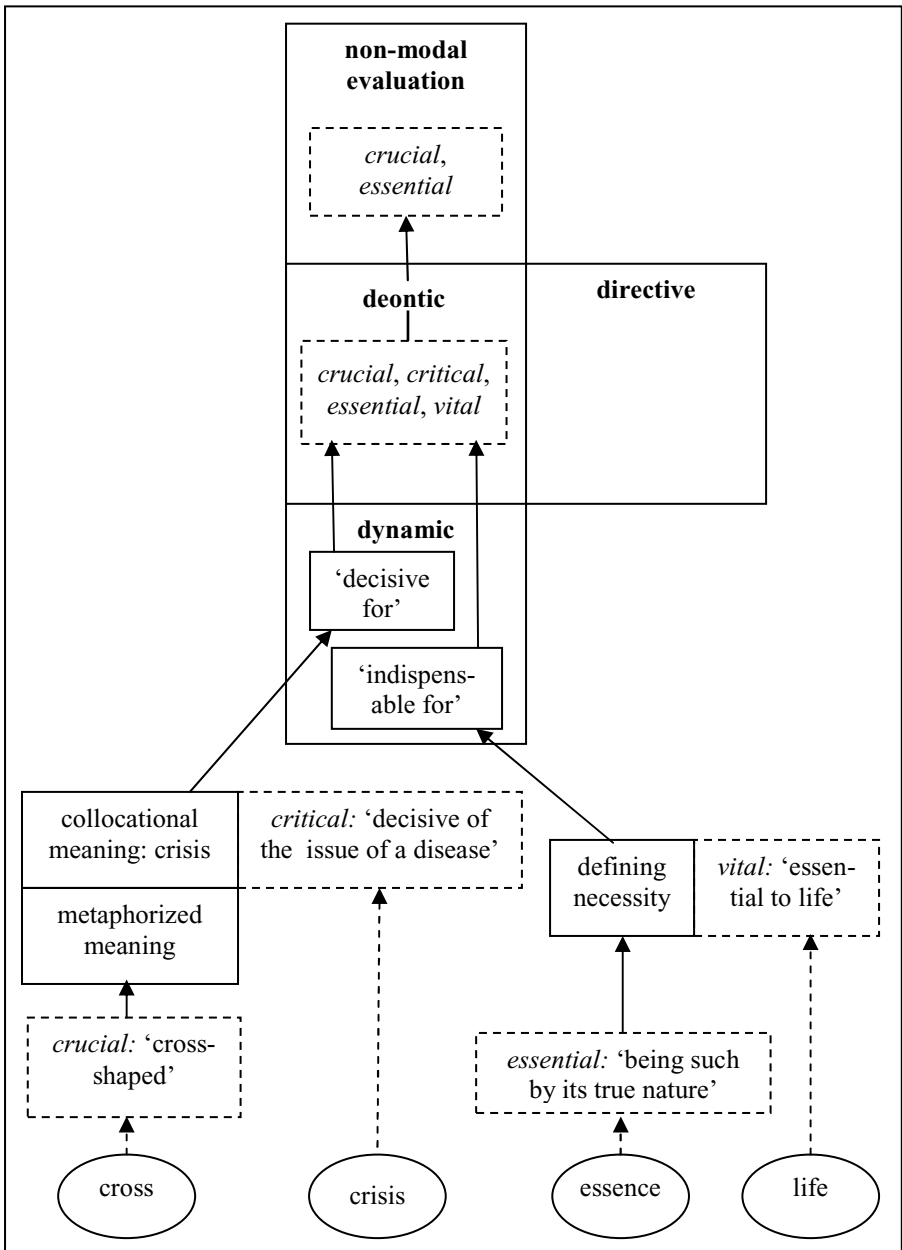


Figure 11. Adjectival pathways of change in the conceptual map

Another concept that deserves further reflection is that of gradability. In the studies of the four adjectives, we noted a change from non-gradable classifier uses to gradable attribute uses, a development that is consistent with the unidirectional tendency posited by Paradis (2001: 58). Within the modal domain, the strong adjectives – which are bounded in nature, cf. section 2.1 – further changed from limit adjectives to extreme adjectives, or from non-scalar to scalar gradable items. This finding also complies with the observation that adjectives tend to develop scalar interpretations (Paradis 2001: 58). Perhaps the study of adjectives in other modal domains, such as *certain* or *true* in the epistemic domain, may reveal similar changes and thus bring other contexts to light in which shifts from non-gradable to gradable take place.

So far, the discussion has focused on the development of strong adjectives. As their meaning – at a certain stage in their semantic development – becomes associated with the notion of necessity, they qualify for the expression of dynamic meaning, which later subjectifies into deontic meaning. However, deontic meaning can also be expressed by a set of weak adjectives, which are unbounded in nature, cf. section 2.1. Some of them also entered the English language through language contact, such as *proper*, *appropriate* and *important*. It may be hypothesized that these adjectives follow a rather different path to deontic meaning. On the one hand, as they cannot express necessity or possibility (see section 2.2.1), the stage of dynamic modality is excluded. Unlike the strong adjectives, they thus do not enter the conceptual map via dynamic meaning. On the other hand, almost all of the weak adjectives develop non-modal attitudinal meaning, whereas this is only a marginal development with strong adjectives. These two differences suggest that the lexico-semantic distinction between weak and strong adjectives correlates with a difference in the semantic development of their modal-evaluative meanings. This difference in diachronic development provides a further lexico-semantic argument for the diachronic applicability of the conceptual map.

The weak adjectives have not been studied in detail here, as they do not lend themselves very well to a comparison with the modal auxiliaries. It may be interesting, though, to look briefly at their lexical sources. Etymologically, a number of weak adjectives can be related to cross-linguistically recurrent lexical sources of (types of) obligation. The origin of the adjectives *proper* and *appropriate*, for instance, pertains to the notion of possession (cf. OED, s.v. *proper* and *appropriate*), just like the expression for obligation in Chepang (Sino-Tibetan) and Temne (Niger-Congo) (Bybee, Perkins, and Pagliuca 1994: 182–183). Likewise, the English semi-modals *have to* and *have got to*, and the Spanish forms *haber de* and *tener que* also

derive from the notion of possession (Bybee, Perkins, and Pagliuca 1994: 184). Arguably, expressions that developed from a lexical verb meaning ‘owe’ evoke the concept of possession as well, such as, for example, the English form *shall*, Danish *skulle* and Cantonese (Sino-Tibetan) *ying goi* (Bybee, Perkins, and Pagliuca 1994: 183). The adjective *fitting* (and possibly also *fit*), by contrast, relate(s) to the notion of measure (cf. OED, s.v. *fitting* and *fit*), much like the expression for obligation in Danish (*må*) (Bybee, Perkins, and Pagliuca 1994: 182). The etymology of the English adjective *meet* and the modal *must* (**motan*) also pertains to measure (OED, s.v. *meet*; Traugott and Dasher 2002: 122). Furthermore, the semantics of the Dutch past participle *gepast* and its German counterpart *angemessen* (as well as the Dutch present participle *passend*) (all ‘fitting’) implies the concept of measure as well. However, the sources of possession and measure are not exclusive to either weak or strong deontic meaning (cf. Bybee, Perkins, and Pagliuca 1994: 182–183; Van der Auwera and Plungian 1998; Traugott and Dasher 2002: 118–119; Heine and Kuteva 2002: 327, 333). In this perspective, these weak adjectives differ from the strong ones studied here, as the latter add new items to the lists of sources of deontic meaning presented in typological studies. As indicated in Figure 11, the adjectives derive from nouns that express abstract notions (*crisis*, *essence*, and *life*) or concrete objects (*cross*) (more details on adjectives and sources of deontic modality can be found in Van Linden 2010b: 538–539, 542–543). Another difference between weak and strong adjectives is that only the first ones are regularly used in either deontic or non-modal evaluative constructions. Put differently, weak adjectives can combine with two semantic types of complement, i.e. mandative and propositional ones (see sections 2.2.2 and 2.2.3). In fact, the development of deontic meaning with weak adjectives seems to be mainly triggered by clausal complementation – of the mandative type. In chapter 6, therefore, I will focus on a number of weak adjectives, and I will show that they appear earlier in deontic expressions with mandative complements than in non-modal evaluative expressions with propositional complements. It will become clear that the upper two categories in the conceptual map are diachronically linked through another set of two distinct pathways.

Chapter 5

The diachrony of the clausal complement patterns

Like the previous one, this chapter is concerned with the diachronic applicability of the conceptual map proposed in section 2.3. It presents the diachronic analysis of the syntactic patterns of clausal complementation with the adjectives studied here. Whereas chapter 4 investigated the diachronic ordering of the categories in the conceptual map, the present chapter sets out to verify whether its conceptual and lexico-semantic distinctions hold across time, i.e. from Old English up to Present-day English.

As with the modal-evaluative domain, the literature on complementation has concentrated mainly on the verbal category. This focus on verbal complementation systems is found in diachronic accounts (e.g., Warner 1982; Rohdenburg 1995; Los 1999, 2005; Miller 2002; Fanego 2004; De Smet 2008), synchronic studies (e.g., Wierzbicka 1988; Achard 1998; Verspoor 2000; Noël 2003), and typological ones (e.g., Givón 1980, 2001: ch. 12; Noonan 1985, 2007; Cristofaro 2003). Moreover, the literature on adjectival complementation has focused primarily on the interaction between adjectives and *to*-infinitives in constructions such as *she is eager to find a new job* and *the book is tough to read*. Again, this bias is reflected in diachronic studies (e.g., Van der Gaaf 1928; Allen 1980; Van der Wurff 1990; Fischer 1991; Fischer, Van Kemenade, and Koopman 2000: 256–283; Miller 2002: 207–219), synchronic accounts (e.g., Lees 1960; Bolinger 1961; Nanni 1980; Mair 1987; Minami 2003), and typological ones (e.g., Comrie and Matthews 1990). Discussions of *to*- and *that*-clauses complementing adjectival predicates are only found as sections in synchronic reference grammars (e.g., Quirk et al. 1985: 1222–1231; Biber, Johansson, and Leech 1999: 672–674, 716–722; Hunston and Francis 1999: 59; Huddleston and Pullum 2002: 1256–1259; Herbst, Heath, and Roe 2004: 278, 408, 540, 926), or comprehensive historical grammars (e.g., Visser 1969–1973; the CHEL-volumes). Faced with either general or partial descriptions (cf. Van Linden and Davidse 2009: 175–176), this chapter aims at a systematic diachronic account of clausal complement patterns with the set of adjectives studied here.

The diachronic description presented in this chapter comprises two parts. In the first part, it will take a closer look at the relation between the matrix and its complement and it will trace the origin and development of the matrix constructions that are central to this study. It will focus on the

development of the copular extraposition construction on the one hand, and on extraposition constructions with active and passive transitive matrices on the other. Interestingly, these matrix types will be related to the various categories in the conceptual map.

In the more elaborate second part, this chapter will document the use of the two formal types of clausal complement that are attested with the adjectives studied here in the various historical stages of English, i.e. *that*-clauses and *to*-clauses. The descriptions illustrate the validity of the conceptual map for diachronic analysis, as they show that its lexico-semantic and conceptual distinctions apply across time. The historical data bear out that strong adjectives are found with mandative complements only, whereas weak adjectives pattern with both mandative and propositional complements as of Old English. In addition, they show notable shifts between subjunctive and indicative forms, modal auxiliaries, and *to*-infinitives. An example is the replacement of *that*-clauses by *to*-clauses in Middle English. I will compare this shift with the findings on verbal complementation, and I will show that the adjectival constructions adduce evidence for the rise of the *to*-infinitive at the cost of the subjunctive *that*-clause proposed for the system of verbal complementation by Los (2005). I will also argue that the distributional change observed with the adjectival constructions has to be explained by analogy with the verbal constructions.

Next to the evidence it presents for the conceptual map, this chapter also serves as a descriptive introduction to chapters 6 and 8, in that it discusses the origin and development of the various constructions found in Present-day English. With its diachronic perspective, it is most closely related to chapter 6, which itself offers developmental arguments in support of the diachronic validity of the conceptual map. Together, chapters 5 and 6 pave the way for chapter 8, which presents a synchronic synthesis and further refinement of the adjectival constructions.

5.1. The relation between matrix and complement

This section traces the origin and development of the extraposition construction with adjectival predicates, the matrix construction central to this study. In this description, it focuses on the relation between the matrix and its clausal complement, that is, on the semantic role and syntactic function of the complement in relation to the matrix predicate. Examples of Present-day English extraposition constructions are given in (1) to (3). It should be noted that the term ‘extraposition’ has received different meanings in the literature. In this study, I adhere to the traditional approach set out by Jes-

persen, in which it generally refers to the placement of a group of words “outside the sentence proper, in which it is represented by a pronoun” (Jespersen 1933: 95). Nominal clauses, such as *to be realistic about your prospects* in (1) or *that the Pope make it a public invitation* in (2), can also occur in extraposition, represented by “preparatory” *it* in the main clause (1933: 154–155). I thus reserve the term ‘extraposition construction’ for constructions such as the examples below, in which a predicative relation between *it* and an adjective is complemented by a clause (see also e.g. Quirk et al. 1985: 1391). Although the term suggests that a particular movement has taken place,⁴⁰ I use it merely as a label for a particular structural configuration in which the clausal complement occurs post-verbally (cf. Kaltenböck 2000, 2003).

- (1) It is **important** to be realistic about your prospects and the length of time it can take to find a new job in the current state of the market. (CB, ukephem)
- (2) Tell him that the sooner he makes the invitation the better, the more lives that may be saved, and tell him we think it **important** that the Pope make it a public invitation without any prior notice to the North Vietnamese. (CB, ukbooks)
- (3) Changes during the 1970s, the hard-core members were probably about 20 per cent of the total; it was considered more **important** to build on them than on the fringe members. (CB, ukbooks)

The remainder of this section discusses the diachrony of the types of extraposition constructions illustrated in (1) to (3). The copular extraposition construction with anticipatory subject *it*, like in (1), was not the rule in earlier stages of English and its development still is a matter of dispute. Constructions such as (2) and (3), which involve transitive matrix verbs (*think* and *consider* respectively) rather than copular ones, haven’t always taken these forms in English either. As is shown by the examples, transitive verbs can be used in the active voice, as in (2), or in the passive voice, as in (3). Crucially, I will focus on the distinctions between copular verb and transi-

40 In early generative grammar, extraposition is seen as a transformation applying in NP complement constructions. In essence, this approach assigns the same deep structure to extraposed and non-extraposed constructions, with the first type deriving from the second one (cf. Jacobs and Rosenbaum 1968: 172). Some recent non-generative grammars also treat extraposition constructions as derived (e.g. Quirk et al. 1985: 1391–1392; Huddleston and Pullum 2002: 67).

tive verb constructions, and I will relate these to the attribution of stance and the conceptual categories of the conceptual map.

5.1.1. The development of the copular extraposition construction

As mentioned above, the copular extraposition construction (EC) with dummy *it* has not always been as firmly established as it is in Present-day English. In the earliest data, the pronoun (*h*)*it* is more frequently absent than present, and when present, its function is not that clear. In the literature, the complement constructions in which the adjectives studied here are first attested are commonly analysed as subjectless constructions (SLCs). However, I will argue that the data adduce evidence for an extraposed subject clause analysis from Old English onwards.

In Old English, a syntactic subject in the nominative case and in concord with the finite verb is not an obligatory element of the clause (Traugott 1992: 213). There are a number of constructions in Old English that do not require an NP in the nominative case and have a finite verb in the third person singular form. Such constructions are often termed ‘impersonal’, though ‘subjectless’ may be a more appropriate label (e.g. Elmer 1981; Traugott 1992: 208; Denison 1993: 61–63). Many authors have argued that the complement constructions studied here are in fact examples of subjectless constructions, although they don’t agree on which subtype they instantiate. In particular, two-place impersonal predicates⁴¹ – as the adjectival matrices could be considered – can occur in three surface patterns, according to different codings of their two semantic roles, i.e. Experiencer (animate nominal), and Cause/Theme (nominal or clausal) (Anderson 1986; Fischer and Van der Leek 1983, 1987). In keeping with Fischer and Van der Leek (1983: 347–354), these three patterns are termed type (i), (ii) and (iii), and examples are given in (4) to (6). The examples feature ‘behave’ class predicates, the semantic class to which the constructions studied here are assumed to belong (Elmer 1981: 40–43; Denison 1993: 66).⁴²

41 I adopt the term ‘impersonal predicate’ from Fischer and Van der Leek (1983: 346–347) to refer to a predicate that can, but need not always, occur in a subjectless construction.

42 For an overview of the various semantic classes of impersonal predicates, see Elmer (1981: 29–47) and Denison (1993: 66–67).

- (4) Type (i): subjectless construction
 Dative Experiencer; Genitive Theme/Cause; 3 SG finite
bonneþe salteres beþurfe
 when you.DAT psalter.GEN need.PRS.SBJV.3SG
 ‘when you need a psalter’ (Wal. 94, cited in Elmer 1981: 66 [24])
 (my glosses and translation)
- (5) Type (ii): Theme/Cause-subject construction
 Dative Experiencer; Nominative Theme/Cause; finite agreeing with
 Nom NP
þe geriseþ lofsang
 you.DAT benefit.PRS.IND.3SG praise.NOM
 ‘A song of praise befits you’ (BT, cited in Elmer 1981: 68 [37])
 (my glosses and translation)
- (6) Type (iii): Experiencer-subject construction
 Nominative Experiencer; Genitive Theme/Cause; finite agreeing
 with Nom NP
he beþearf eac micles fultumes
 he.NOM need.PST.IND.3SG also great.GEN help.GEN
 ‘He needed also great help/support’ (BT, cited in Elmer 1981: 73
 [45]) (my glosses and translation)

These three types with nominal arguments are generally agreed on.⁴³ More controversy exists on constructions with clausal arguments, as in (7) below, termed ‘type (i/ii)’ in Denison (1993: 64–66). It is a matter of debate whether this equivocal type, to which the adjectival constructions belong (cf. Visser 1972: §903; Elmer 1981: 42; Traugott 1992: 212; Denison 1993: 66), is a true subjectless construction like type (i) or a Theme/Cause-subject construction like type (ii).

43 It should be noted that Elmer (1981: 40) regards *(be)þurfan*, *behofian* and *ge-neodian* as necessity predicates (‘to have need of’, ‘require’) rather than pure ‘behave’ predicates (‘be fitting’, ‘behave’, ‘benefit’) such as *gedafenian*, *gerisan* or the adjectival matrices discussed here. In his data, those proper ‘behave’ predicates – unlike the necessity predicates – are not attested in type (i) and (iii) (Elmer 1981: 65, 73).

- (7) Type (i/ii): equivocal construction
 Dative Experiencer; clausal Theme; 3 SG finite
Biscepe gedafenað þæt he
 bishop.DAT [behove.PRS.IND.3SG] that he[.NOM]
sie tælleas.
 be[.PRS.SBJV.3SG] blameless
 ‘A bishop should be blameless.’ [‘It behoves a bishop that he be blameless’, AVL] (CP 52.11, cited in Denison 1993: 84 [69])

In Elmer’s (1981) view, for example, the *that*- and *to*-clauses of adjectival constructions such as (8) and (9) are complements of a true subjectless construction (type [i]) with an optional dative Experiencer (a human referent) and a genitive Theme (the complement clause). Others assume a type (ii) analysis and regard the complements as subject clauses like in Present-day English (e.g. Callaway [1913: 7] for *to*-clauses in Old English; Warner [1982: 108–109] for both *that*- and *to*-clauses in Middle English; Mitchell [1985: §1963] for *that*-clauses in Old English, while *to*-clauses can in Mitchell’s view be either subjects or subject complements [1985a: §1540]; cf. also later formal approaches [Fischer, Van Kemenade, and Koopman 2000: 71, 95]). Thirdly, Visser (1972: §863, §903) somehow assumes both analyses, as he deals with the clauses under the heading of subject clauses, but describes them as complements of ‘impersonal phrases’. Traugott (1992: 235) and Denison (1993: 64), finally, state that the discussion is undecidable. All of this shows that the relation between the adjectival matrix and the clausal complement in constructions such as (8) and (9) is not straightforward.⁴⁴

- (8) *Forðon hit is neodþearf, þæt ure spræc eft hi sylfe*
 therefore it is necessary that our speech afterwards it.self
gebige to þam gemetfæstum arwyrðum fæderum, þara
 turn.PRS.SBJV to the reasonable honourable fathers whose
lif ascean & mære gewearþ geond
 life shone.forth and famous became throughout
Suplangbeardna land.
 Southern.Lombards.GEN land
 ‘Therefore, it is necessary that our speech should afterwards turn it-
 self to the reasonable and honourable fathers, whose life shone

44 The expression in (8) has a clausal Theme only, whereas that in (9) contains both an Experiencer and a clausal Theme.

- forth and became famous throughout the land of the Southern Lombards.’ (YCOE 1050–1099 GDPref and 3 [C] 25.229.3)
- (9) & *þonne him ðearf sie ma manna up*
 And when them.DAT necessary be.PRS.SBJV more men.GEN up
mid him to habbanne on hiora fore,
 with them to have on their expedition
gecyðe symle, swa oft swa him
 make.known.PRS.SBJV always as often as them.DAT
ðearf sie, in gemotes gewitnesse cyninges
 necessary be.PRS.SBJV in council.GEN testimony king.GEN
gerefan.
 reeve.GEN
 ‘When it is necessary to them to have more men with them on their expedition, they should always make it known, as often as it is necessary to them, in testimony of the council (and) of the king’s reeve.’ (YCOE 890–999 LawAf 1 34.1)⁴⁵

However, Old and Early Middle English correlative *that*-structures indicate that the controversy should be resolved in favour of a subject clause analysis from Old English onwards. Up to 1350, the corpus data include (a minority of) *that*-clause constructions with deictic *that* in the matrix, as in (10) below (cf. Table 16).

45 Together with *neodðearf*, *ðearf* can also function as a noun in Old English (Bosworth and Toller 1898: 719a; Hall 1916: 214b; TOE). In constructions such as (8) and (9), *niedðearf* and *ðearf* may be specified or modified adnominally, e.g. by adjectives such as *mycel* (‘great’, ‘big’), indefinite determiners such as *ænig* (‘any’) or *nan* (‘no[ne]’), or by genitive noun phrases. An example is given below. Although it can be seen that the adjectival and nominal constructions are very similar, as noted by e.g. Visser (1970: §60; 1972: §866, §903), these last ones are excluded from analysis.

(viii) *Cwæð ic: ic wat þæt me ðæs is micel ðearf þæt ic*
 said I I know that me.DAT that.GEN is great necessity that I
halwendum weacenum ætfeole, & for minum gedwolum
 salutary.DAT vigils.DAT adhere.PRS.IND/SBJV and for my errors
 & *synnum geornlice Dryhten bensie.*
 and sins zealously Lord supplicate.PRS.IND/SBJV
 ‘I said: “I know that there is great necessity thereof/it is very necessary to me that I adhere to salutary vigils, and supplicate God zealously for my errors and sins.”’ (YCOE 1050–1099 Bede 4 26.354.7)

- (10) *Rihtlic þæt wæs þæt se blinda be ðæm wege sæte*
 fitting that was that the blind.one by the way sit.PST.SBJV
wædliende forþon þe Drihten sylfa cwæþ, Ic eom weg
 begging because the Lord himself said I am way
sodfæstnesse;
 truth.GEN
 ‘Fitting that was that the blind man sat begging by the way(-side),
 because the Lord himself said “I am the way of truth.”’ (YCOE
 990–1010 HomS 8 [BIHom 2] 62)

In this example, the *þæt* in the matrix clause functions as a deictic pronoun, referring cataphorically to the post-verbal *that*-complement. Originating in the neuter singular demonstrative pronoun *þæt*, this ‘anticipatory’ *þæt* can function either as subject or object (Traugott 1992: 237). Constructions like (10) thus show that the complement clauses of adjectival matrices function as (Theme-)subject (cf. type [ii]), rather than as non-subject Theme-complement to an impersonal predicate (cf. type [i]), in which a nominal Theme-argument is marked for genitive case, which would have yielded *þæs* instead of *þæt*.

In addition, the clausal complements of the adjectival constructions invariably occur post-verbally in Old English (cf. Visser 1972: §898; Elmer 1981: 23; Fischer and Van der Leek 1983: 349; Traugott 1992: 217). This observation has led some formal linguists to posit an expletive subject in the matrix which may be overt, as in (8), or non-overt (‘null’), as in (9) (cf. Hulk and Van Kemenade 1993).⁴⁶ In this sense, the term ‘extraposition’ can be argued to apply to the OE and ME adjectival constructions as well. In the course of ME, the surface subject (*h*)*it* became obligatory through the loss of verb-second and the rise of rigid SVO word order (cf. Denison 1993: 73–96; Allen 1995; Trips 2002). It is also only in that period that the

46 The question of the surface subjects brings up the question of the complement or adjunct status of the dependent clauses. In the examples with cataphoric *that* in the matrix, as in (10), this deictic pronoun arguably carries a thematic role and is an argument of the adjectival matrix predicate, which implies that the post-verbal *that*-clause functions as adjunct rather than as argument/complement (cf. Bennis 1986). The form (*h*)*it*, by contrast, is generally held not to carry a thematic role, so that the clauses in constructions like (8) are true complements of the adjectival matrix (cf. Hulk and van Kemenade 1993). However, the OE and ME data do not include the specific extraction phenomena typically used as evidence for the syntactic status of the clauses.

clausal complements start to occur in preverbal position (cf. Warner 1982: 65, 108; Fischer 1992: 313).

The data show that the adjectival constructions increasingly obey the surface subject constraint. Table 16, drawn from the total of copular constructions with the adjectives in the corpora, presents the frequencies of the surface subjects from Old English⁴⁷ to Early Modern English.

Table 16. The distribution of surface subject forms in copular constructions with *that*-clauses and *to*-clauses (dem: demonstrative; *this* or *that*)

Type of compl	Sub-ject	EOE		LOE		EME		LME		EModE	
		750–950	950–1150	1150–1350	1350–1500	1500–1710	n	%	n	%	
<i>that</i> -clause	Ø	26	63.41	44	57.89	5	50.00	1	3.33	3	3.16
	(<i>h</i>) <i>it</i>	14	34.15	23	30.26	2	20.00	29	96.67	92	96.84
	dem	1	2.44	9	11.84	3	30.00	0	0.00	0	0.00
	total	41	100	76	100	10	100	30	100	95	100
<i>to</i> -clause	Ø	9	90.00	5	100	6	54.55	4	7.84	1	0.95
	(<i>h</i>) <i>it</i>	1	10.00	0	0.00	5	45.45	47	92.16	104	99.05
	dem	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	total	10	100	5	100	11	100	51	100	105	100
Total	Ø	35	68.63	49	60.49	11	52.38	5	6.17	4	2.00
	(<i>h</i>) <i>it</i>	15	29.41	23	28.40	7	33.33	76	93.83	196	98.00
	dem	1	1.96	9	11.11	3	14.29	0	0.00	0	0.00
	total	51	100	81	100	21	100	81	100	200	100

In general, Table 16 shows a steady increase of the form (*h*)*it*, which matches a decrease of constructions without a surface subject (Ø). It can also be seen that constructions with *that*-clauses lead the way, as they are more frequently found with a surface subject form than those with *to*-clauses, especially in the earliest periods. Towards the EModE period, the form *it* is found in almost every construction. The four EModE exceptions (2.00%) involve matrices with ellipsis of the finite form (and hence also subject form) and constructions in a specific syntactic environment, which is illustrated in (11) below. In the LModE and PDE data (not presented here), dummy *it* occurs without exception.

- (11) But in the obseruancyes of the chyrche be many thynges whiche is **necessary** for vs to do (PPCEME 1521, Fisher, *Against Luther*)

47 The adjectival data corroborate the finding that in Old English surface subject forms are not used exclusively to produce V-2 order (cf. Elmer 1981: 71; Allen 1986). However, a detailed study of V-2 in the adjectival constructions is beyond the scope of this book.

In conclusion, although quite a few scholars maintain that the question of the syntactic function of the clausal complement in relation to the matrix is undecidable in the earliest adjectival data (i.e. either a true SLC or a Theme/Cause-subject construction), Old and Early Middle English constructions with cataphoric *that* show that the complements function as subject of the matrix finite verb, in post-verbal or extraposed position. Due to changes in word order, the frequency of dummy *it* increases steadily and towards the LModE period its occurrence is exceptionless. The adjectival data therefore offer new findings to the discussion of so-called subjectless constructions, and adduce additional evidence for well-established processes of syntactic change, which resulted in the generality of SVO word order with a surface subject.

5.1.2. Copular and transitive verb constructions in the conceptual map

This section concentrates on the two subtypes of extraposition construction introduced above, i.e. the copular verb (discussed in the previous section) and the transitive verb construction. These constructions are semantically similar, in that they both involve a predicative relationship between a dummy element (*it*) and an adjective, complemented by a clause, but they differ in the syntactic function of the complement in relation to the matrix, and – more importantly – in the types of conceptual meaning they can express. In addition, they show a different distribution in the history of English.

If we take a look at the syntactic relation between matrix and complement, we can note obvious differences between the copular and transitive verb constructions. The examples below repeat examples (1) to (3) given above.

- (12) It is **important** to be realistic about your prospects and the length of time it can take to find a new job in the current state of the market. (CB, ukephem)

Example (12) illustrates the copular extraposition construction (EC), in which the clausal complement functions as subject of the adjectival matrix, or rather, as subject of the copular finite form with the adjective functioning as a subject complement.

- (13) Tell him that the sooner he makes the invitation the better, the more lives that may be saved, and tell him we think it **important** that the

Pope make it a public invitation without any prior notice to the North Vietnamese. (CB, ukbooks)

(13) is a transitive extraposition construction, in which the clausal complement functions as object of the active finite form *think* (with dummy *it* functioning as anticipatory object). The adjective functions as a secondary predicate (cf. Aarts 1995: 75), more specifically as an object complement. Verbs such as *think* or *consider*, which can occur in this construction, are termed ‘complex transitive verbs’ in Quirk et al. (1985: 54).

(14) Changes during the 1970s, the hard-core members were probably about 20 per cent of the total; it was considered more **important** to build on them than on the fringe members. (CB, ukbooks)

Example (14) is a transitive extraposition construction as well, but it has a passive finite form (*was considered*), so that the clausal complement functions as subject of the matrix finite form. Syntactically, therefore, the passive transitive EC is more similar to the copular EC than to the active transitive EC.

The syntactic differences between the three types of ECs can be related to their different distribution across the conceptual categories included in the conceptual map (see section 2.3). While the copular construction can be used to express any type of conceptual category, the transitive verb constructions manifest a more restricted use. To discuss these differences in distribution in more detail, it is useful to take a closer look at the types of verbs found in transitive ECs. These verbs can be divided into two distinct sets, which have a different distribution across the active and passive construction. Transitive ECs most frequently feature a cognition verb designating a mental process, such as *think* (as in [13] above), *consider*, *find* or *hold*. The second set of verbs includes causative predicates, such as *make* or *render*, as in (15).

(15) The demands on this market for bullion have been greater, and have been more incessant, than they ever were before, for this is now the only bullion market. This has made it **necessary** for the Bank of England to hold a much larger banking reserve than was ever before required. (CLMETEV 1873 Bagehot, *Lombard Street*)

The data show that cognition verbs occur in both active and passive transitive ECs, whereas the causative verbs are only found in the active subtype. Interestingly, the two sets of verbs can be related to the conceptual catego-

ries of the conceptual map. Transitive ECs with causative verbs and strong adjectives typically express situational-dynamic meaning. In such expressions, the syntactic subject of the transitive matrix finite form designates the compelling circumstance. In (15), for example, it is the greater demands for bullion that have caused the Bank of England to hold a larger reserve. Transitive ECs with cognition verbs, by contrast, invariably express attitudinal meaning, i.e. either deontic meaning, as in (13)–(14) above and (16) below, or non-modal evaluative meaning as in (17) (see section 2.3).

- (16) Upon the Italian's being made acquainted with the quality of Sir Edmund, and the high connections of the two travellers, he thought **proper** to desist from any acts of impertinence. (CLMETEV 1753 Cibber, *The lives of poets of Great Britain and Ireland* [Vol. 1])
- (17) The village was marginally bigger than the last one and, being concealed in the protective shadow of the volcano She thought it **fitting** that Michelle should have been brought there. (CB, uk-books)

Active transitive ECs with cognition verbs make the attribution of stance overt in that they provide a structural slot to encode the attitudinal source of the assessment, i.e. the syntactic subject of the transitive verb (such as *he* in [16]). In such constructions with a *to*-clause complement, the attitudinal source and the agent expected to carry out the SoA typically coincide, as in (16): the *he*-person thinks it proper that he himself desists from those acts. Passive transitive ECs, however, do not make the attitudinal source explicit and hence involve covert attribution of stance. In cases like (14), it is not obvious whether the speaker wants to associate or rather dissociate him- or herself with/from the assessment (cf. Biber, Johansson, and Leech 1999: 977). The copular EC, by contrast, has no distributional restrictions. It can be used in situational dynamic expressions, as well as in attitudinal ones. In these last ones, it involves covert attribution of stance, like the passive transitive EC (remember that these two constructions are also syntactically very similar). Both types can be used to present the assessment as a generally held opinion. In the case of copular ECs, however, it can easily be inferred that the assessment is at least shared by the speaker, unlike with passive transitive ECs (Biber, Johansson, and Leech 1999: 977). I will return to the distribution of the matrix constructions across the conceptual map in chapter 8.

Table 17. The diachronic distribution of copular and (active and passive) transitive matrix constructions with their patterns of clausal complementation

Type of construction	Type of compl	EOE 750– 950	LOE 950– 1150	EME 1150– 1350	LME 1350– 1500	EModE 1500– 1710	LModE 1710– 1920	PDE 1990– 1995
copular EC	<i>that-cl</i>	n 41	76	10	30	95	943	943
		% 78.85	92.68	47.62	36.59	30.74	17.99	29.81
	<i>to-cl</i>	n 10	5	11	51	105	908	2,022
		% 19.23	6.10	52.38	62.20	33.98	47.49	63.93
	total	n 51	81	21	81	200	1,252	2,965
	% 98.08	98.78	100	98.78	64.72	65.48	93.74	
active transitive EC	<i>that-cl</i>	n 0	1	0	1	13	33	19
		% 0.00	1.22	0.00	1.22	4.21	1.73	0.60
	<i>to-cl</i>	n 1	0	0	0	91	569	165
		% 1.92	0.00	0.00	0.00	29.45	29.76	5.22
	total	n 1	1	0	1	104	602	184
	% 1.92	1.22	0.00	1.22	33.66	31.49	5.82	
passive transitive EC	<i>that-cl</i>	n 0	0	0	0	1	12	2
		% 0.00	0.00	0.00	0.00	0.32	0.63	0.06
	<i>to-cl</i>	n 0	0	0	0	4	46	12
		% 0.00	0.00	0.00	0.00	1.29	2.41	0.38
	total	n 0	0	0	0	5	58	14
	% 0.00	0.00	0.00	0.00	1.62	3.03	0.44	
Total	n	52	82	21	82	309	1,912	3,163
	%	100	100	100	100	100	100	100

How did the distribution of the matrix construction types develop over time? Table 17 shows the relative share of copular, active transitive and passive transitive ECs across the various historical periods. It can be seen that the transitive constructions are only of the active type and very rare in Old and Middle English, but show a sudden rise to one third of the data in the Early Modern English period. (Note that this is also the period in which dummy *it* has become almost exceptionless in the copular EC, see section 5.1.1.) This development illustrates Rissanen's (1999: 283) observation that the EModE use of noun clauses with adjectives is more varied than in ME, as not only copular but also transitive constructions are found. Of the two types of transitive ECs, the active is much more frequent than the passive (33.66% versus 1.62%). The LModE data present a similar distribution. In Present-day English, the copular EC has gained ground again (to 93.74%). Of the two types of transitive ECs, the active one remains the more frequent construction (5.82% versus 0.44%). To conclude this section, I give an example of a transitive verb construction from the OE, ME and EModE

period. Examples from the LModE and PDE period have been given in (15)–(16) and (12)–(14) respectively.

- (18) *We forði foresceawiað and fremful taliað to*
 we therefore foresee and profitable consider to
gehealdsumnesse gemænre sibbe and soþre
 keeping general.GEN friendship.GEN and true.GEN
lufe, þæt eal mynstres fadung and endebyrdnesse
 love.GEN that all monastery.GEN order and arrangement
on þæs abbodes dome and tæcinge simle
 in the.GEN abbot.GEN authority and command always
stande.
 stand.PRS.SBJV
 ‘Therefore we foresee and consider it profitable to the keeping of
 general friendship and true love that all order and arrangement of
 the monastery always remain in the authority and command of the
 abbot.’ (YCOE 1000–1050 BenR 65.125.5)
- (19) *he held it expedient to honowr of þe blissful Trinite þat hys*
 he held it expedient to honour of the blissful trinity that his
holywerkys xulde be notifyd & declaryd to þe pepil, whan
 holyworks should be notified and declared to the people when
it plesyd hym, to þe worschip of hys holy name.
 it pleased him to the worship of his holy name
 ‘He held it expedient to the honour of the blissful Trinity that his
 holy works should be notified and declared to the people, when it
 pleased him, to the worship of his holy name.’ (PPCME a1438
 MKempe A 221)
- (20) His Highnes thinketh hit very **necessary** not onely that my lord of
 Surrey were in all possible haste advertised of the declaration of the
 Duke of Burbon, but also that the same were insert within the letter
 which the Quene of Scottes shall shew to the Lordis (PPCEME
 c1523–1524 More, *Letter to Wolsey*)

5.2. The types of clausal complement

The previous section, which focused on the relation between matrix and complement, dealt with clausal complements in general terms, that is, without distinguishing between formal types. The present section concentrates on the complements as such; it takes a closer look at the origin and development of the two basic formal types of complement found in the PDE da-

ta, i.e. *that*- and *to*-clauses. Examples of the various formal types are given in (21) to (24).

- (21) Since any changes in the Indian system were bound to come up against the opposition of the meddling Hardinge, it was **essential** that Haig be supported in his work by Creagh. (CB, ukbooks)
- (22) Social Services Chair, Cllr, Margaret Mervis, is determined that people in need of help should have easy access to a wide range of available services. “It is **essential** that the facts about Care in the Community are understood” (CB, ukmag)
- (23) The bowlers were tired and frustrated and Stewart knocked them around And it was entirely **appropriate** – fated, even – that Stewart should be batting when Atherton edged Pollock to the third-man boundary for his hundred. (CB, sunnow)
- (24) This year’s Festival Ball will deliver the same potent mix of high fashion and celebration enjoyed by revellers last year – and with a few exciting differences. In keeping with the present choreographic fashion style, where models are being encouraged to explore movement and rhythm, it is **appropriate** to link these two most expressive media (CB, ukephem)

The constructions in (21) to (23) all involve *that*-clauses, but these have different finite forms (underlined in the examples): a subjunctive form in (21), an indicative form in (22), and a modal auxiliary in (23). The construction in (24) contains a *to*-infinitival complement.

In addition to the formal features of the complements, this section will also discuss the semantic distinction between mandative and propositional complement clauses. Mandative complements are the type of clausal complement found in deontic constructions, referring to potential or virtual SoAs that are assessed as desirable (cf. sections 2.2.2 and 2.2.3), as in (21), (22) and (24). As the complements of dynamic constructions also refer to potential SoAs and as they are formally indistinguishable from those of deontic expressions, they will be counted as mandative complements as well. Propositional complements, by contrast, are part of non-modal evaluative constructions and refer to SoAs that are presupposed to be true, as in (23). In what follows, it will become clear that the formal types do not correlate with the semantic types on a one-to-one basis across the various historical periods. In addition, it will be shown that strong adjectives only take mandative complements, whereas weak adjectives pattern with both mandative and propositional complements from Old English onwards.

Hence, the data demonstrate the diachronic applicability of the conceptual map.

Another interesting observation becomes apparent when the two formal types of complement are compared in terms of distributional frequencies across time. It will be shown that the mandative ECs witness a rise of the *to*-infinitive at the expense of the subjunctive *that*-clause in the Middle English period, as has also been observed for verbal matrices with a volitional element by Los (1999, 2005). This change in distribution is explained by analogy with the verbal constructions. Unlike with these last types, the *to*-infinitive with adjectival matrices stabilizes at roughly a 3:1 ratio to the *that*-clause from Early Modern English onwards. For these later periods, I propose that the clausal variation may be motivated by lexical determination and discourse factors such as information structure.

This section first focuses on the type of clausal complement that was the most prominent one in Old English, i.e. the *that*-clause (cf. Fischer, Van Kemenade, and Koopman 2000: 62), and goes on with the type of clausal complement that is most common with most of the adjectives studied in Present-day English, i.e. the *to*-clause.

5.2.1. *That*-clauses

It is generally agreed that the PDE *that*-clause originates in a less tight or more independent structure (Mitchell 1985; Traugott 1992; Hopper and Traugott 1993⁴⁸). It has been hypothesized that the complementizer *that* derives from “a neuter singular demonstrative pronoun followed by an explanatory clause in apposition”, as in, for example, “He said that: Abraham was a holy man” (Traugott 1992: 237). In this ‘paratactic’ structure, the pronominal deictic *that* functions as object to the finite form *said*, but at the same time it cataphorically refers to the next clause, which is conceptually relevant to the first clause containing *that* (as it renders the words of the *he*-subject). This clearly paratactic origin is not entirely certain. Correlative structures such as (25) below are often taken to show traces of a pronominal source for the complementizer *that* (Traugott 1992: 237; Hopper and Traugott 1993: 186). In fact, such examples merely show that *that* is still

48 Hopper and Traugott (1993: 168) regard this development as an instance of grammaticalization across clauses, which involves “a unidirectional cline from relatively free juxtaposition to syntactic or morphological bondedness”. Lehmann (1988) lists a few parameters of this type of change.

used as a cataphoric pronoun at the time when the complementizer use has already been established.

- (25) *þæt* *gefremede Diulus hiora consul, þæt*
 [that.]DEM arranged Diulus their consul [that.]COMP
þæt *angina wearð tidlice þurftogen.*
 [that.]DEM beginning [became] in.time achieved
 ‘Their consul Diulus arranged (it) that it was started on time.’
 [‘That arranged their consul Diulus, that the beginning was timely
 achieved.’, AVL] (c880, Orosius 4 6.172.2, cited in Hopper and
 Traugott 1993: 186 [44])

In (25), the first *þæt* is a demonstrative pronoun, “a fronted (topicalized) object pronoun anticipating the complement introduced by the second *þæt*” (Hopper and Traugott 1993: 186). As the second *þæt* functions as complementizer, the structure in (25) does not contain two independent units, but rather one main and one dependent clause. As discussed in section 5.1.1, the adjectival data include similar examples, cf. (10). To my knowledge, such correlative structures with adjectival matrices have not been noticed so far (e.g. Hopper and Traugott 1993: 187), but they shed a new light on the syntactic relation between matrix and complement. In addition, they suggest that complementizer *that* previously occurred in looser, more independent structures than in Present-day English. This is also evidenced by the finding that *that*-clauses appear in clause-initial subject position only in the 14th century (Warner 1982: 81). In Present-day English, *that* can be used to introduce subordinate clauses (e.g. the complements studied here or reported speech) or embedded clauses (e.g. restrictive relative clauses or noun complement clauses) (cf. Hopper and Traugott 1993: 168–171).

In keeping with cross-linguistic findings on the development of complementizers (e.g. Lord 1976; Mithun 1984, 1988; Haiman 1985; Traugott 1985; Genetti 1991; Diessel forthcoming), the English form *that* shows a development from looser to tighter syntactic structuring. Moreover, its pronominal deictic origin is typical of such developments, as deictic reference to entities in the non-linguistic world may extend to anaphoric or cataphoric reference to propositions (linguistic entities) (Hopper and Traugott 1993: 178). This functional extension motivates the syntactic reanalysis of *that* from a demonstrative pronoun functioning as a constituent of the matrix clause to a complementizer introducing a dependent clause (Hopper and Traugott 1993: 187).

Throughout the history of English, *that*-clauses have been construed with a finite verb phrase. The Present-day English examples (21) to (23)

showed that these finite verb phrases can differ in form. In the remainder of this section, it will become clear that the distribution of the formal types underwent considerable changes throughout history. Whereas in Old English *that*-clauses, finite forms typically occur in the subjunctive mood, later periods witness the rise of indicative forms and modal auxiliaries, especially the modal *should*. I will present the data of the finite verb forms found in the complements of the adjectival constructions with copular and transitive verb matrices. In this description, I will relate the various formal types to the semantic types of complement, i.e. mandative and propositional clauses. Interestingly, it will become clear that the two semantic types become formally differentiated in terms of mood from Middle English onwards. More generally, the data will illustrate the validity of the conceptual map for diachronic analysis, as strong adjectives are found with mandative complements only, whereas weak ones pattern with both mandative and propositional ones across the various historical periods.

In the diachronic literature, much attention has been paid to the development of the subjunctive form,⁴⁹ or, in Visser's (1972: §834) terms, "the modally marked form". I focus on what has been written about its use in (dependent) complement clauses, and compare this to the picture presented by the adjectival data. I have arranged all the relevant figures in one table per period, in which per category the first row represents the raw figures or absolute frequencies, and the second row the normalized or relative frequencies per 100,000 words.⁵⁰ As Figure 12, based on the normalized figures, shows, the data clearly indicate an overall change in the coding of the complement finite verb, specifically a decrease of subjunctive forms and an increase of modal forms, often termed 'periphrastic alternants' (e.g. Övergaard 1995). The various stages of this change are discussed chronologically, with a focus on the semantic value of the subjunctive mood and the distinction between mandative and propositional complements.

49 The subjunctive has often been defined notionally instead of formally (see Visser [1972: §834] for an overview). In this study, I use the term 'subjunctive mood' to refer to a morphological category of the verb (see section 1.3.1).

50 In Tables 18 to 26, the semantic types of the complements include 'mand' and 'prop', standing for 'mandative' and 'propositional' respectively. I also distinguish between present and past matrices, and more specifically between indicative matrix verbs or modalized ones. These last ones include subjunctive forms and modal auxiliaries. It will become clear that across the various periods, the modal status of the matrix does not really have a significant influence on the form of the complement finite verb. For the tense of the matrix, however, we can detect a temporary effect, as will be explained below.

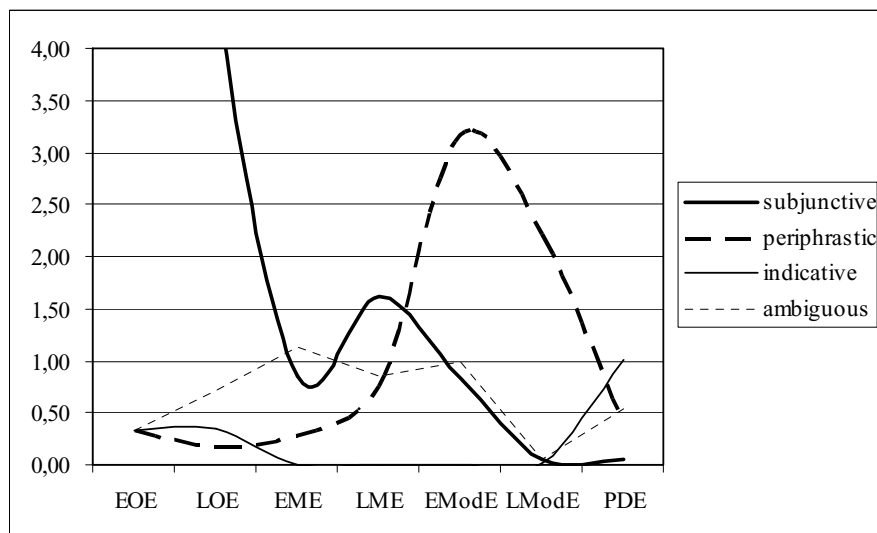


Figure 12. The development of the finite form in *that*-clauses with adjectival ECs

In Old English, the finite verb occurs most frequently in the subjunctive mood (83.90%). Historically, its forms derive from the Indo-European optative rather than subjunctive mood, but this term has become standard in the description of all Germanic languages (cf. Mustanoja 1960: 452; James 1980: 154; Plank 1984: 345). The Old English subjunctive has regular paradigms in the present and past tense.⁵¹ Even if its formal properties are clear, the semantic character of the subjunctive in Old English dependent clauses is hard to pin down. It has been argued, for instance, that in some cases the subjunctive mood has no specific semantic value at all, but merely serves as a marker of subordination (cf. Fischer 1992: 314). A similar conclusion can be drawn from statements that the choice between indicative and subjunctive mood may depend on the lexical item governing the complement clause (within a semantically coherent set) (cf. Mitchell 1985: §2019–2022). The origin of the subjunctive paradigm in the Germanic optative mood, however, suggests that the mood type does have a semantic

51 In the present tense, all forms but the first person singular are distinct from the indicative forms. In the past tense, strong verbs have distinctive forms for the first and third person singular, and the plural forms, whereas weak verbs have such forms only for the second person singular and the plural forms. The verb *be* is special in that nearly all its forms are distinctive; only the first person singular present form *beo* and the second person singular past form *were* are ambiguous.

value, which can be thought of as mandative. Similarly, Los (2005: ch. 2–5) argues that the original distribution of the subjunctive *that*-clause was restricted to purposive environments. At the beginning of the Old English period, it had spread to – semantically similar – mandative environments, functioning, for instance, as argument of intention verbs and manipulative verbs (see section 5.2.2). Nevertheless, the most influential proposals ascribe a more general semantic value to the subjunctive, which is associated with a wide range of meanings in the modal-evaluative domain. According to Mitchell (1985: 2033), for example, the subjunctive is used in contexts that involve necessity (dynamic modality), desirability (deontic modality), probability or doubt (epistemic modality), and emotional judgements such as wonder, regret or joy (non-modal evaluation). In the same vein, Visser (1972: §866) states that after impersonal phrases expressing “the speaker’s attitude of mind”, such as the constructions studied in this book, the subjunctive is the rule.⁵² However, he also mentions the use of the present indicative as ‘futural’ present in *that*-clauses after impersonal phrases that “point to the future” (i.e. complements containing potential SoAs), such as *it is behoveful, it is needful*, which is less frequent than that of the subjunctive (Visser 1972: §742).

The Old English data presented in Tables 18 and 19 make it clear that the subjunctive is not only used in mandative complements, as suggested by its origin, but also in propositional ones. They thus seem to support the view that the Old English subjunctive has a general meaning that includes both modal and evaluative meanings. In fact, mandative and propositional complements do not differ very much in terms of grammatical coding. The expressions below, for example, illustrate the two semantic types, construed with subjunctive and indicative forms.

- (26) *Us is þonne nedþearf þæt we secan þone læcedom*
 us.DAT is then necessary that we seek.PRS.SBJV the salvation
ure sawle; forþon þe Drihten is swiðe mildheort
 our.GEN soul.GEN because PRT Lord is very merciful
se us trymede & lærde.
 who.REL.PRON us incited and taught
 ‘It is then necessary to us that we (should) seek the salvation of our
 soul, because the Lord, who incited and taught us, is very merci-

52 Proposals relating the use of the subjunctive to the polarity, modal status and sentence type of the matrix assign a general modal meaning to the mood type as well (cf. Mitchell 1985: §1999, 2027–2031; Traugott 1992: 239).

ful.’ (YCOE 990–1010 HomU 19 [BIHom 8]: 22) (*mandative; subjunctive mood*)

- (27) *Durh þone Halgan Gast hie innewardum heortum*
 through the holy ghost they inward.DAT hearts.DAT
ecelice burnon þære Godes lufan, swa þæt
 perpetually burned the.GEN God.GEN love.DAT so that
gelimplic wæs þæt þa ætgædere wæron on ecre
 appropriate was that those together be.PST.IND in eternal
stowe, þa þe on heora heortan & on willan on God
 place they who in their heart and in will in God
gecyrred wæron.
 turned be.PST.IND
 ‘Through the Holy Ghost they were burning perpetually with God’s
 love, with their whole hearts, so that it was appropriate that those

Table 18. The form of the finite verb in *that*-clauses after strong and weak adjectives in EOE (YCOE 750–950)

Type of adj	Comp: sem	Matrix: form	TOT	Complement verb: form						
				pres subj	pres amb	pres ind	pres mod subj	past subj	past amb	past ind
strong	mand	ind	21	19	1	-	1	-	-	-
		pres	6.91	6.25	0.33	-	0.33	-	-	-
		mod	1	-	1	-	-	-	-	-
		ind	0.33	-	0.33	-	-	-	-	-
		past	-	-	-	-	-	-	-	-
		mod	-	-	-	-	-	-	-	-
TOTAL			22	19	2	-	1	-	-	-
			7.24	6.25	0.66	-	0.33	-	-	-
weak	mand	ind	14	14	-	-	-	-	-	-
		pres	4.61	4.61	-	-	-	-	-	-
		mod	-	-	-	-	-	-	-	-
		ind	1	-	-	-	-	1	-	-
		past	0.33	-	-	-	-	0.33	-	-
		mod	2	-	-	-	-	-	1	1
TOTAL			17	14	-	-	-	1	1	1
			5.60	4.61	-	-	-	0.33	0.33	0.33
prop	ind	pres	1	-	-	1	-	-	-	-
		past	0.33	-	-	0.33	-	-	-	-
		ind	1	-	-	-	-	1	-	-
		past	0.33	-	-	-	-	0.33	-	-
TOTAL			2	-	-	1	-	1	-	-
			0.66	-	-	0.33	-	0.33	-	-

Table 19. The form of the finite verb in *that*-clauses after strong and weak adjectives in LOE (YCOE 950–1150)

Type of adj	Comp: sem	Matrix: form	TOT	Complement verb: form							<i>myhtte</i>
				pres subj	pres amb	pres ind	pres mod subj	past subj	past amb	past ind	
strong	mand	ind	18	14	2	1	1	-	-	-	-
		mod	1.59	1.23	0.18	0.088	0.088	-	-	-	-
		ind	2	-	-	-	-	2	-	-	-
	past	ind	0.18	-	-	-	-	0.18	-	-	-
		mod	1	-	-	-	-	1	-	-	-
		TOTAL	0.088	-	-	-	-	0.088	-	-	-
	TOTAL			21	14	2	1	1	3	-	-
			1.85	1.23	0.18	0.088	0.088	0.26	-	-	-
weak	pres	ind	32	30	2	-	-	-	-	-	-
		mod	2.82	2.64	0.18	-	-	-	-	-	-
		ind	3	3	-	-	-	-	-	-	-
	mand	mod	0.26	0.26	-	-	-	-	-	-	-
		ind	5	-	-	-	-	2	1	1	1
		ind	0.44	-	-	-	-	0.18	0.088	0.088	0.088
	past	mod	7	-	-	-	-	6	-	1	-
		mod	0.62	-	-	-	-	0.53	-	0.088	-
		TOTAL	47	33	2	-	-	8	1	2	1
	TOTAL			4.14	2.91	0.18	-	-	0.71	0.088	0.18
prop	pres	ind	5	3	-	-	-	-	1	1	-
		mod	0.44	0.26	-	-	-	-	0.088	0.088	-
	past	ind	4	-	-	-	-	1	2	1	-
		mod	0.35	-	-	-	-	0.088	0.18	0.088	-
	TOTAL			9	3	-	-	-	1	3	2
			0.79	0.26	-	-	-	0.088	0.26	0.18	-

be together in the eternal place, they who were turned to God in their hearts and will.’ (YCOE 990–1010 HomS 47 [BIHom 12] 47) (*mandative; indicative mood*)

- (28) *Wæs þæt eac gedefen, þætte þæt swefn gefylled wære,*
 was that also fitting that that vision fulfilled be.PST.SBJV
þætte Breogoswið hire modor geseah on hire cildhade.
 that.REL.PRON Breogoswithher mother saw in her hildhood
 ‘That was also fitting, that that vision was fulfilled, which Breogoswith, her mother, saw in her childhood.’ (Later on in the text: *þæt swefn wæs soðlice gefylled in hire deahter* [i.e. Hild, the abbess of Whitby, AVL] *bi þære we nu sprecað.* ‘The vision was truly fulfilled in her daughter, about whom we are talking now.’)

(YCOE 1050–1099 Bede 4 24.336.28) (*propositional; subjunctive mood*)

- (29) *Anhafen ic wæs, genyþerod and gescend; and eft: **God**
exalted I was, oppressed and disgraced and afterwards good
me is, þæt þu me genyþeradest, þæt ic leornige
me.DAT is that you me oppress.PST.IND that I learn.PRS.SBJV
þine bebode.
your commands*

“I was exalted, oppressed and disgraced.” And afterwards: “It is good to me that you (have) oppressed me, so that I learn your commands.” (YCOE 1000–1050 BenR 7.29.14) (*propositional; indicative mood*)

In Middle English, the share of subjunctive forms has decreased to 48.78%. Table 21 most clearly indicates the locus of change: the complement clauses of all past matrices feature either an ambiguous form or a modal auxiliary, but no subjunctive form. By contrast, the complement clauses of the present matrices still contain some subjunctive forms – though not many. The fact that the decrease in frequency of subjunctive forms started in past contexts has been noted by, amongst others, Visser (1972: §836), Traugott (1972: 150) and Plank (1984: 346) (however, none of these authors provides details about the data on which this finding is based). The loss in frequency can be explained by phonological changes that started in the Old English period.⁵³ A second explanation can be found in the early use of periphrastic constructions with modal auxiliaries, which are semantically more specific than subjunctive forms (Fischer 1992: 262). Plank (1984: 346) writes that there was even a “tendency to over-use the (pre-)

53 The vowels in the final unstressed syllables were increasingly reduced to /ə/ (Lass 2006: 61–62), so that the past indicative (–on) and past subjunctive plural endings (–en) became homophonous (Turner 1980: 272). Thus, weak verbs kept a distinctive form only for the second person singular (with subject *thou*), and strong verbs (and *be*) did so for the first and third person singular (Fischer 1992: 247). However, these singular forms of strong verbs gradually became homophonous as well through grade reduction (i.e. the reduction of the number of ‘grades’ or root vowels) and final schwa-deletion (see Lass 2006: 77). This development started in the Northern dialects in the Old English period and slowly spread south throughout the Middle English period (Mustanoja 1960: 452; Lass 1992: 132). Out of the six constructions with a past matrix and *should* as complement verb in Table 21, for example, only one could have been construed with a distinctive subjunctive form.

modals”, which were originally inflected for the subjunctive mood themselves. In the following Old English example, the *that*-clause contains such a pre-modal in the subjunctive mood (*moten*).

Table 20. The form of the finite verb in *that*-clauses after strong and weak adjectives in EME (PPCME 1150–1350)

Type of adj	Comp: sem	Matrix: form	TOT	Complement verb: form								
				pres subj	pres amb	pres ind	pres mod subj	past perfect subj	past amb	past ind		
strong	mand	pres	ind	1	1	-	-	-	-	-	-	
			mod	0.28	0.28	-	-	-	-	-	-	
		past	ind	-	-	-	-	-	-	-	-	
			mod	-	-	-	-	-	-	-	-	
		TOTAL			1	1	-	-	-	-	-	-
					0.28	0.28	-	-	-	-	-	-
weak	mand	pres	ind	6	2	3	-	1	-	-	-	
			mod	1.70	0.57	0.85	-	0.28	-	-	-	
		past	ind	1	-	-	-	-	-	-	1	
			mod	0.28	-	-	-	-	-	-	0.28	
		prop	ind	1	-	-	-	-	-	1	-	
			mod	0.28	-	-	-	-	1	-	-	
	TOTAL			9	2	3	-	1	1	1	1	
				2.56	0.57	0.85	-	0.28	0.28	0.28	0.28	
	prop	pres	ind	-	-	-	-	-	-	-	-	
		past	ind	-	-	-	-	-	-	-	-	
TOTAL			-	-	-	-	-	-	-	-		

- (30) *La, fæder, us is þæt swiþe mycel gewinn, þæt we for þam*
 oh father us.DAT is that very great toil that we for the
wætere daga gehwilce ofdune stiġað to þam seaðe. Forþon
 water day whichever down go to the well therefore
us is nydbearf, þæt þa mynstru of þære stowe
 us.DAT is necessary that the monasteries of that place
moten beon gecyrrede to oþre stowe.
 must.PRS.SBJV be turned to other place
 ‘Oh, Father, to us this is a very great toil, that we go down to the
 well for water whichever day. Therefore it is necessary to us that
 the monasteries of that place have to be turned to another place.’
 (YCOE 1050–1099 GD 2 [C] 5.112.20–24)

Table 21. The form of the finite verb in *that*-clauses after strong and weak adjectives in LME (PPCME 1350–1500)

Type of adj	Comp: sem	Matrix: form	TOT	Complement verb: form								
				pres subj	pres amb	pres ind	past amb	past ind	<i>should</i>	<i>myhte</i>		
strong	mand	pres	ind	5	-	-	-	-	-	-	-	
			mod	0.62	0.62	-	-	-	-	-	-	-
		past	ind	-	-	-	-	-	-	-	-	-
			mod	-	-	-	-	-	-	-	-	-
		TOTAL			5	5	-	-	-	-	-	-
					0.62	0.62	-	-	-	-	-	-
weak	pres	ind	14	8	5	-	-	-	1	-		
			1.74	1.00	0.62	-	-	-	0.12	-		
		mod	2	-	-	-	-	-	-	-		
			0.25	0.25	-	-	-	-	-	-		
	mand	ind	5	-	-	-	1	-	4	-		
			0.62	-	-	-	0.12	-	0.50	-		
		past	3	-	-	-	1	-	2	-		
			0.37	-	-	-	0.12	-	0.25	-		
	TOTAL			24	10	5	-	2	-	7	-	
				2.99	1.24	0.62	-	0.25	-	0.87	-	
prop	pres	ind	1	-	-	-	1	-	-	-		
			0.12	-	-	-	0.12	-	-	-		
	past	ind	1	-	-	-	-	-	-	1		
			0.12	-	-	-	-	-	-	0.12		
TOTAL			2	-	-	-	1	-	-	1		
			0.25	-	-	-	0.12	-	-	0.12		

The use of periphrastic alternants soon spread from past to present contexts (Traugott 1972: 150),⁵⁴ Fischer writes that this happened from about 1300 onwards for the form *should* (1992: 315). Table 21 shows one example with a present matrix and *should* in the complement. In the paradigm of the present tense, phonetic reduction caused homophony as well, especially in the Midland areas. The plural forms had *-es* in the indicative, but the ending *-e(n)* could be used for either indicative or subjunctive (Lass 1992: 137). In this study, plural forms ending in *-en* or *-e* were counted as am-

54 Fischer (1992: 247) notes that in addition to periphrastic variants, the function of the past subjunctive was taken over by the past indicative, termed the 'modal preterite' (see, for instance, Visser 1972: §812–820). The use of the modal preterite also extended from past to present contexts in LME, which affirms its modal status (involving tense-shift) (Fischer 1992: 247). The data studied here, however, do not include such examples.

biguous.⁵⁵ To continue the argument on the influence of the tense of the matrix on the coding of the finite form, I present the relevant data from Tables 18 to 21 above and Tables 23, 25 and 26 in Table 22. This table bears out the overall decline of the unambiguous subjunctive forms in *that*-clauses from Old English up to Late Modern English. Fisher's exact tests (cf. Pederson 1996) show that all decreases are statistically significant with p-values ranging from $p=1.422E-07$ up to $p=0.0008203$, except for the change from Late Modern to Present-day English ($p=0.7337$). The table also clearly indicates that the tense of the matrix has played a crucial part in the Middle English period: subjunctive forms occur in 60% of the present context data, but only in 9.09% of the past context data (Fisher's exact $p=0.004779$). The general development is matched by a steady increase of modal auxiliaries or 'periphrastic alternants' (Övergaard 1995) (in the three Old English examples and in two (out of eight) Middle English ones, the modal auxiliaries are themselves marked for the subjunctive mood). The various increases all are significant with $8.482E-15 < p < 0.0002854$ up to LModE, but there is also a significant fall from LModE to PDE with $p < 2.2E-16$. In addition, the difference in relative frequencies of these forms in present contexts as opposed to past ones is most pronounced for the Middle English period, with 6.67% versus 63.64% respectively (Fisher's exact $p=0.000424$). The portions of indicative forms and morphologically ambiguous or 'neutralized forms' (López Couso and Méndez Naya 1996) do not show significant differences for ME (with Fisher's exact $p=1$ in both cases). We can therefore conclude that the tense of the matrix clause has had an effect on the formal coding of the finite form only temporarily, mainly in the Middle English period (cf. Van Linden 2010a: 32–35).

The data not only show that in Middle English the formal distinctness of the subjunctive is affected (first in its past paradigm), they also suggest that its semantic value becomes restricted to modal meaning. Whereas in Old English subjunctive forms are found in both mandative and propositional complements, in Middle English they are restricted to the first type. This finding ties in with Mustanoja's (1960: 458–459) description of the subjunctive mood in dependent noun clauses in ME. It is telling that for non-modal evaluative contexts (sorrow, joy, surprise, wonder) he only mentions

55 The present plural forms in the Middle English data are all ambiguous and come from texts from the Northern (N) or Midland (M) dialect areas, i.e. *Rolle, Prose Treatises* (Thornton Ms.) (N), *The Northern Prose Rule of St. Benet* (N), *Ancrene Riwle* (M), *Rievaulx's De Institutione Inclusarum* (M), and *The Tale of Melibee* (M).

Table 22. The frequency of subjunctive forms and periphrastic alternants with present and past matrices (n: absolute frequency; N: relative frequency per 100,000 words; %: relative share)

Tense of matrix	Coding of finite in <i>that</i> -clause	Freq	OE	ME	EModE	LModE	PDE	
			750–1150	1150–1500	1500–1710	1710–1920	1190–1995	
present	subjunctive forms	n	83	18	15	10	14	
		N	5.72	1.56	0.84	0.067	0.033	
		%	87.37	60.00	19.23	3.83	1.75	
	periphrastic forms (sbjv/ambig/ind)	n	2	2	45	239	107	
		N	0.14	0.17	2.51	1.59	0.25	
		%	2.11	6.67	57.69	91.57	13.34	
	ambiguous forms	n	7	9	18	10	333	
		N	0.48	0.78	1.00	0.067	0.79	
		%	7.37	30.00	23.08	3.83	41.52	
	indicative forms	n	3	1	0	2	348	
		N	0.21	0.087	-	0.013	0.83	
		%	3.16	3.33	-	0.77	43.39	
	Total	n	95	30	78	261	802	
		N	6.55	2.60	4.35	1.74	1.91	
		%	100	100	100	100	100	
	past	subjunctive forms	n	14	1	5	1	18
			N	0.97	0.087	0.28	0.0067	0.043
			%	60.87	9.09	16.13	0.78	11.11
periphrastic forms (sbjv/ambig/ind)		n	1	7	22	124	66	
		N	0.069	0.61	1.23	0.83	0.16	
		%	4.35	63.64	70.97	96.88	40.74	
ambiguous forms		n	4	3	2	1	2	
		N	0.28	0.26	0.11	0.0067	0.0048	
		%	17.39	27.27	6.45	0.78	1.23	
indicative forms		n	4	0	2	2	76	
		N	0.28	-	0.11	0.013	0.18	
		%	17.39	-	6.45	1.56	46.91	
Total		n	23	11	31	128	162	
		N	1.59	0.95	1.73	0.85	0.38	
		%	100	100	100	100	100	

the use of the periphrastic alternant *should*, whereas for deontic and epistemic contexts he does not distinguish between subjunctive and periphrastic forms. The preservation of the subjunctive in mandative clauses and its loss in propositional ones can be related to the grammaticalization of the premodals, especially **sculan*. This verb expressed moral and financial obliga-

tion in Old English, but its past form *sceolde(n)* was also used with evidential ‘hearsay’ meaning in reported clauses (Traugott 1989: 39–42). In this sense, it already had an epistemic colouring in Old English, which further developed throughout the ME period. The form thus came to be used in contexts for which the question of the SoA’s likelihood is discursively relevant, such as epistemic and non-modal evaluative expressions (see section 2.2.2). In these last expressions *should* is termed ‘emotional *should*’ (Jespersen 1933: 287) or ‘attitudinal *should*’ (Huddleston and Pullum 2002: 1001),⁵⁶ and it cannot be replaced by a subjunctive form (Davies 2001: 234–235; Huddleston and Pullum 2002: 1002). It may therefore be hypothesized that the development of the modal auxiliaries did not only trigger the overall loss in frequency of the subjunctive but also its semantic specialization.

The Early Modern English data fit in with the developments discussed so far. On the one hand, the subjunctive forms only occur in mandative clauses, and they show a further loss in frequency (they account for 18.35% of the cases, see Table 23). Again, this decrease is accompanied by further attrition of inflectional morphology. By the end of the ME period, the past subjunctive paradigm has disappeared, except for the verb *be*, which even now still has *were* as a distinctive form for the first and third person singular (Lass 1999: 162).⁵⁷ In EModE, only the second (*thou*) and third person singular present forms are distinctive.⁵⁸ In addition to (few) inflectional endings, negation distinguishes between the two mood types as well, as indicative finite verbs are negated with *do*-support, while subjunctive ones are either preceded or followed by the negation particle *not* (Fillbrandt 2006: 139). On the other hand, an overwhelming majority of EModE cases has the modal *should* as finite form. It can be seen in Table 23 that the form

56 Quirk et al. (1985: 1014) do not distinguish between *should* used in mandative or propositional clauses. In both cases, they label it ‘putative *should*’. In (1985: 1015, note [c]), they do mention ‘putative’ and ‘obligational’ meanings of *should*, but this distinction is not pursued any further.

57 The six instances with a past subjunctive in Table 23 have the form *were* and a third person singular subject. However, these forms are used in a non-past context and have a tentative or hypothetical meaning (cf. Rissanen 1999: 229–231).

58 Again, *be* has preserved more distinctive forms, i.e. all singular forms (at least when *thou* rather than *you* is used for the second person). In the plural, the form *are* is a purely indicative form, whereas *be(n)* is ambiguous (Fillbrandt 2006: 137).

is found in mandative as well as propositional complements. The earliest example with attitudinal *should* in the adjectival data is given below.

- (31) Couche on your marybones whooresons, down to the ground. Was it **meete** he should tarie so long in one place Without harmonnie of Musike, or some solace? (PCEME 1552–1553 Udall, *Ralph Roister Doister*)

It is clear from the context that the *he*-person in (31) has tarried long in one place. The speaker here wonders whether it was meet he actually did so.

Table 23. The form of the finite verb in *that*-clauses after strong and weak adjectives in EMode (PCEME 1500–1710)

Type of adj	Comp: sem	Matrix: form	TOT	Complement verb: form								
				pres subj	pres amb	past subj	past amb	past ind	<i>should</i>	<i>shall</i>	<i>may</i>	
strong	mand	ind	22	7	5	1	-	-	9	-	-	
		pres	1.23	0.39	0.28	0.056	-	-	0.5	-	-	
		mod	1	-	-	-	-	-	1	-	-	
		mod	0.56	-	-	-	-	-	0.056	-	-	
	mand	ind	7	1	-	-	-	-	6	-	-	
		past	0.39	0.056	-	-	-	-	0.33	-	-	
		mod	-	-	-	-	-	-	-	-	-	
		mod	-	-	-	-	-	-	-	-	-	
	TOTAL			30	8	5	1	-	-	16	-	-
				1.67	0.45	0.28	0.06	-	-	0.89	-	-
weak	mand	ind	48	5	11	1	-	-	30	1	-	
		pres	2.68	0.28	0.61	0.056	-	-	1.67	0.056	-	
		mod	2	1	-	-	-	-	1	-	-	
		mod	0.11	0.056	-	-	-	-	0.056	-	-	
	prop	ind	8	-	-	-	-	-	8	-	-	
		past	0.45	-	-	-	-	-	0.45	-	-	
		mod	15	-	-	4	2	2	7	-	-	
		mod	0.84	-	-	0.22	0.11	0.11	0.39	-	-	
	TOTAL			73	6	11	5	2	2	46	1	-
				4.07	0.33	0.61	0.28	0.11	0.11	2.56	0.06	-
prop	pres	ind	4	-	2	-	-	-	2	-	-	
		mod	0.22	-	0.11	-	-	-	0.11	-	-	
	past	ind	1	-	-	-	-	-	-	-	1	
		mod	0.06	-	-	-	-	-	-	-	0.056	
	past	ind	1	-	-	-	-	-	1	-	-	
		mod	0.06	-	-	-	-	-	0.056	-	-	
TOTAL			6	-	2	-	-	-	3	-	1	
			0.33	-	0.11	-	-	-	0.17	-	0.056	

Clearly, the EModE data confirm the frequency loss and semantic specialization of the subjunctive, as well as the increase of periphrastic alternants and the acquired polysemy of *should*.

The adjectival data from the Middle and Early Modern English period discussed above can be compared to data attested with verbal matrices. For Middle English, Moessner (2007) investigates forty volitional verbs taking mandative *that*-clauses, such as *bede*, *beseche*, *commande* and *halsie*. In her data, 764 instances drawn from the *Helsinki Corpus*, subjunctive forms have a smaller overall share (28.66%) than in the mandative clauses with adjectival matrices discussed above (48.72%). Whereas the relative frequencies of indicative and ambiguous forms remain rather stable in the four stages investigated (1150–1250, 1250–1350, 1350–1420, 1420–1500), the frequency of the subjunctive forms decreases gradually from 39.83% in the first subperiod to 21.17% in the last subperiod. This decrease is matched by an increase of periphrastic alternants from 22.03% in the first subperiod to 49.80% in the last subperiod (Moessner 2007: 215, Table 2). However, Moessner does not distinguish between present and past matrices, a distinction that is especially important in the ME period (see Table 22). We can conclude that the overall tendencies observed with verbal matrices in Middle English are more in keeping with the developments of the finite forms with past adjectival matrices than with present ones.

For the Early Modern English period, data on mandative *that*-clauses with verbal matrices are provided by Fillbrandt (2006). She starts from forty-seven manipulative verbs, and looks at the development of the finite form throughout three stages: 1500–1570 (E1), 1570–1640 (E2), and 1640–1710 (E3). In her study, ambiguous forms are excluded; only clauses with a second or third person singular subject are taken into account (2006: 139). The 1566 instances extracted from the *Helsinki Corpus* reveal the following picture. The share of the subjunctive forms decreases from 19.27% in the first subperiod to 4.52% in the last one (2006: 144). The relative frequency of the periphrastic alternants rises slightly, but not so much as the concurrent decrease of the subjunctive frequencies. It turns out that it is the indicative forms that gain in frequency at the expense of the subjunctive forms, from 52.02% in the first subperiod to 62.67% in the last one (2006: 145). In this perspective, the verbal data are very different from the adjectival data presented in Table 24 below, in which the frequency loss of the subjunctive in mandative clauses is clearly matched by a rise in frequency of periphrastic variants rather than indicative forms.

In the Late Modern English data, the share of subjunctive forms (in mandative complements) has further decreased to 2.64% (see Table 25).

Table 24. Finite verb forms in mandative clauses with adjectival matrices in EModE (n: absolute frequency; %: relative share)

Finite form	Fr	only 2SG and 3SG subjects				all subjects			
		E1	E2	E3	Total	E1	E2	E3	Total
subjunctive	n	12	4	3	19	12	5	3	20
	%	48.00	30.77	16.67	33.93	36.36	16.67	7.50	19.42
periphrastic alternants	n	12	9	15	36	16	15	32	63
	%	48.00	69.23	83.33	64.29	48.48	50.00	80.00	61.17
indicative	n	1	-	-	1	1	1	-	2
	%	4.00	-	-	1.79	3.03	3.33	-	1.94
ambiguous	n	-	-	-	-	4	9	5	18
	%	-	-	-	-	12.12	30.00	12.50	17.48
Total	n	25	13	18	56	33	30	40	103
	%	100	100	100	100	100	100	100	100

With the loss of the personal pronoun *thou* and the associated distinctive verb form (Strang 1970: 139–141; Denison 1998: 106), the distinctive forms in this period are reduced to the third person singular (except for *be*: all persons in the present [*be*], and first and third person singular in the past [*were*]). This formal distinction between the indicative and subjunctive mood has not changed so far; the Present-day English data have been analysed in the same way as the LModE data (for a detailed description, see Haegeman 1986: 64; Denison 1998: 160–164). By far most LModE mandative *that*-clauses contain periphrastic forms, such as mandative *should*, *be to*, *shall*, *could* or *would* (93.93%). Propositional complements mainly have attitudinal *should* (7 out of ten cases).

In the Present-day English data, the relative frequency of the subjunctive forms (again, in mandative complements only) has stabilized at 3.97% (see Table 26).⁵⁹ Whereas in LModE, a vast majority of mandative clauses contain a modal finite form, in PDE these occur in only 17.25% of the data. The most frequent types include ambiguous forms (39.95%) and indicative forms (38.83%). Thus, after a steady rise from Middle English onwards, the periphrastic forms lose frequency in PDE mandative complements to the

59 In his study on the mandative subjunctive in noun clauses after mandative verbs, nouns and “emotive” adjectives, Övergaard (1995) shows that in the first half of the 20th century the majority of cases contain periphrastic alternants in British English. However, he shows that in the second half of the previous century, the subjunctive gains in frequency, “primarily in noun clauses following mandative verbs and nouns” (1995: 37). To explain this reversal in frequency, he invokes the influence of American usage, which could spread to Britain after the second world war through the development of the mass media.

benefit of modally non-marked or ambiguous forms. In the propositional clauses, which in PDE have become more frequent relative to the mandative ones, the periphrastic forms do not account for the majority of cases anymore either (21.52%). In these cases, the finite verbs are most frequently indicative forms (70.25%).

In conclusion, the diachronic corpus study of *that*-clauses found with the adjectives studied in copular or transitive ECs has shown that the finite form changes in formal type across the various historical periods. Subjunctive forms, which were the most frequent type in Old English, gradually lose frequency, mostly in favour of periphrastic alternants up to Late Modern English, but also of indicative and ambiguous forms, especially in Present-day English. This shift in formal type has been generally attributed to the attrition of inflectional morphology and the availability of alternative expressions, such as modal auxiliaries. Moreover, this development has been supported by the general trend from synthetic towards analytic modes of expression in Middle English (Turner 1980: 272; Rissanen 1999: 228). More importantly, however, the diachronic data presented here have also confirmed that the conceptual map applies across time in that from Old English onwards strong adjectives are construed with mandative *that*-clauses only,⁶⁰ while weak ones pattern with both mandative and propositional complements.⁶¹ Moreover, they have shown that the two semantic types of complement become formally differentiated in terms of mood. Whereas in Old English, the subjunctive mood is found in both mandative and propositional clauses, as it can express a wide range of modal-evaluative meanings (cf. Mitchell 1985: §2033), from Middle English onwards it is attested in mandative clauses only (and its use is restricted to

60 In the PDE data of *essential* and *crucial*, the few examples with propositional complements have been left out (see sections 4.2 and 4.5). In section 6.4.1, I will discuss these expressions more extensively, and I will argue that they do not form true counterexamples to the lexical boundaries in the conceptual map.

61 The difference in the distribution of the semantic types of complement constitutes the most important difference between weak and strong adjectives. For other distinctions, the data do not point in one direction. For instance, they show that in OE subjunctive forms (in present contexts) are more frequent with weak matrices than with strong ones, whereas from ME onwards strong adjectives preserve these forms more than weak ones. Periphrastic forms show a reverse development: in OE they are more frequent with strong matrices than with weak ones, whereas from ME onwards, they are more often found with weak adjectives than with strong ones (except in PDE, when periphrastic alternants are slightly more frequent with strong adjectives than with weak ones).

modal meanings, cf. Mustanoja 1960: 458–459). Around the same period, the modal auxiliaries become modally polysemous, and the form *should* develops its attitudinal use that is restricted to non-modal evaluative contexts (in addition to its deontic and epistemic uses).

In general, the two semantic types of complement have been thought of as discrete categories. However, in some cases with weak adjectives, the constructions studied contextually support both a mandative and propositional reading, and are thus better regarded as bridging contexts (Evans and Wilkins 2000: 550). In this section, I have counted these constructions – conservatively – as mandative ones, as these make up the most frequent type. In section 6.4.2, I will show that with a specific set of weak adjectives these bridging contexts play an important part in the development of propositional complements out of mandative ones.

Table 25. The form of the finite verb in *that*-clauses after strong and weak adjectives in LModE (CLMETEV 1710–1920)

Type of adj	Comp: sem	Matrix: form	TOT	Complement verb: form											
				pres subj	pres amb	pres ind (is to+ inf)	pres perf ind	past subj	past amb	past perfect ind	should	shall	could	would	
strong	mand	pres	ind	104	5	4	1	-	-	-	-	92	2	-	-
			mod	0.69	0.033	0.027	0.0067	-	-	-	-	0.61	0.013	-	-
		past	ind	4	-	1	-	-	-	-	-	3	-	-	-
			mod	0.027	-	0.0067	-	-	-	-	-	0.020	-	-	-
			ind	58	-	-	-	-	-	-	-	58	-	-	-
			mod	0.39	-	-	-	-	-	-	-	0.39	-	-	-
TOTAL	171	5	5	1	-	-	-	-	158	2	-	-			
1.14	0.033	0.033	0.0067	-	-	-	-	1.055	0.013	-	-				
weak	prop	pres	ind	135	3	4	1	-	-	-	-	125	1	1	-
			mod	0.90	0.020	0.027	0.0067	-	-	-	-	0.83	0.0067	0.0067	-
		past	ind	15	2	-	-	-	-	-	-	12	1	-	-
			mod	0.10	0.013	-	-	-	-	-	-	0.080	0.0067	-	-
			ind	44	-	-	-	-	-	-	1	42	-	-	1
			mod	0.29	-	-	-	-	-	-	0.0067	0.28	-	-	0.0067
TOTAL	208	5	4	1	-	1	1	1	191	2	1	1			
1.39	0.033	0.027	0.0067	-	0.0067	0.0067	0.0067	1.28	0.013	0.0067	0.0067				
strong	mand	pres	ind	3	-	1	-	1	-	-	-	1	-	-	-
			mod	0.020	-	0.0067	-	0.0067	-	-	-	0.0067	-	-	-
		past	ind	6	-	-	-	-	-	-	-	1	5	-	-
			mod	0.04	-	-	-	-	-	-	-	0.0067	0.033	-	-
			ind	1	-	-	-	-	-	-	-	1	-	-	-
			mod	0.0067	-	-	-	-	-	-	-	0.0067	-	-	-
TOTAL	10	-	1	-	1	-	-	1	7	-	-	-			
0.067	-	0.0067	-	0.0067	-	-	0.0067	0.047	-	-	-				

Table 26. The form of the finite verb in *that*-clauses after strong and weak adjectives in CB

Type of adj	Comp: sem	Matrix: form	TOT	Complement verb: form														
				pres subj	pres amb	pres ind	pres perf ind	past ind	past perf ind	<i>should</i>	<i>have to</i>	<i>could</i>	<i>can</i>	<i>must</i>	<i>will</i>	<i>need to</i>		
strong	mand	pres	ind	273	11	113	119	-	1	-	21	-	-	5	3	-	-	
			mod	0.65	0.026	0.27	0.28	-	0.0024	-	0.050	-	-	0.012	0.0071	-	-	
		past	ind	57	12	-	2	-	25	-	16	1	-	-	-	-	-	1
			mod	0.14	0.029	-	0.0048	-	0.059	-	0.038	0.0024	-	-	-	-	-	0.0024
		TOTAL		331	23	114	121	-	26	-	37	1	-	5	3	-	1	
				0.79	0.0546	0.27	0.29	-	0.062	-	0.088	0.0024	-	0.012	0.0071	-	0.0024	
weak	mand	pres	ind	420	3	205	147	1	-	59	1	2	2	-	-	-		
			mod	1.00	0.0071	0.49	0.35	0.0024	-	0.14	0.0024	0.0048	0.0048	-	-	-		
		past	ind	52	6	1	-	-	18	-	26	-	-	-	1	-	-	
			mod	0.12	0.014	0.0024	-	-	0.043	-	0.062	-	-	-	0.0024	-	-	
		TOTAL		475	9	208	147	1	18	-	85	1	3	2	1	-	-	
				1.13	0.021	0.49	0.35	0.0024	0.043	-	0.20	0.0024	0.0071	0.0048	0.0024	-	-	
weak	prop	pres	ind	104	-	12	44	19	16	9	-	-	3	-	1	-		
			mod	0.25	-	0.029	0.10	0.045	0.038	-	0.021	-	-	0.0071	-	0.0024	-	
		past	ind	2	-	-	-	1	-	-	-	-	-	-	-	1	-	
			mod	0.0048	-	-	-	0.0024	-	-	-	-	-	-	-	0.0024	-	
		TOTAL		158	-	13	46	20	44	1	26	1	2	3	-	2	-	
				0.38	-	0.031	0.11	0.048	0.10	0.0024	0.062	0.0024	0.0048	0.0071	-	0.0048	-	

5.2.2. *To*-clauses

It is commonly accepted that the *to*-infinitive clause originates in a prepositional phrase (PP) with the allative preposition *to* and a dative-inflected verbal noun (e.g. Jolly 1873: 150–154; Delbrück [1893–1900] 1967: i 50, ii 451; Callaway 1913: 1–2; Wright and Wright [1908] 1925: 260; Jespersen [1927] 1974: 9–12; Haspelmath 1989; Beekes 1990: 297–298; Hopper and Traugott 1993: 183; Fischer 1997, 2003: 456–457; Miller 2002: 188–191; Los 2005: 155–157). This view dates back to the work of early Indo-Europeanists such as Bopp, who argued that (forms used as) infinitives in older Indo-Germanic languages are petrified cases of action nominals ([1833–1852] 1871: iii §849–886). His analysis has gained general acceptance, but scholars disagree on whether the bare infinitive, ending in *-an*⁶² in Old English has the same etymology as the inflected infinitive preceded by *to* and ending in *-anne*.⁶³ Wright and Wright ([1908] 1925: 260) argue that the *to*-infinitive derives from the bare infinitive. They state that the bare infinitive was formed by adding the nominalizing suffix *-(o)no* to the verb stem, which in turn received the nominative-accusative neuter ending *-m*. The Primitive Germanic *-onom* ending regularly became *-an* in Old English. The bare infinitive could be inflected like the nominal *ja*-stems, giving rise to the *to*-infinitive ending in *-enne*, which became *-anne* “through the influence of the infinitive ending *-an*” ([1908] 1925: 260). Many influential authors adopted this view, such as Callaway (1913), Jespersen ([1927] 1974: 9–10), Mustanoja (1960: 512–513), Visser (1972: §897) and Lightfoot (1979: 186–199) (see Los [2005: 4–9] for a more detailed overview). However, to other scholars the inflection according to the *ja*-declension has seemed problematic (e.g. Grimm [1870–1898] 1967: iv 118; Jolly 1873: 150–154; Van Loey 1954: 154). For the same reason, Los (2005: 155–157) rejects the derivation account, and proposes an alternative etymology for the *to*-infinitive, presented in (32) below.

- (32) *to berenne*
to (preposition) + *ber-* (verb stem) + *-*anja-* (derivational suffix) +
*-*i* (DAT SG inflection)
 Primitive/Common Germanic: **to beranjōi*

62 Apart from *-an*, variants are attested in Old English, such as *-on*, *-un*, *-en* and Northumbrian *-a* (Callaway 1913: 2)

63 Also for *-anne*, other endings are attested in Old English, such as *-enne*, *-onne*, *-ane* and *-ene* (Callaway 1913: 2)

Thus, in her view, the *ja*-element is part of a nominalizing suffix. According to this hypothesis, the nominative form of this verbal noun would have been *beren* in Old English (“from **berann*, with simplification of the final geminate and fronting of the vowel [umlaut]”), but this form is not attested as an infinitival form in the Old English data (Los 2005: 156). Los thus convincingly concludes that the bare infinitive and *to*-infinitive are etymologically unrelated, in that they derive from nominalizations with different suffixes.

The origin of the *to*-infinitive as a *to*-PP has led many authors to assume that its categorial status in Old English was still PP (amongst others, the authors accepting the derivation account mentioned above). However, Los (2005: ch. 7) adduces various types of evidence showing that the *to*-infinitive is a clause in Old English already. She mentions the occurrence of *to*-infinitives in conjoined structures, the strict adjacency of *to* and infinitive, the fossilized nature of the dative ending of the *to*-infinitive, its non-occurrence with determiners or ‘inherited objects’ in the genitive or in an *of*-PP, and its positioning to the right of the matrix (unlike that of bare infinitives, which can precede or follow the matrix) (Los 2005: 157–170) (cf. Miller 2002: 237–238). The most important evidence in favour of a clausal analysis comes from the spread of the *to*-infinitive to contexts other than those found with purposive *to*-PPs, the preposition stranding facts in OE *to*-infinitival relatives, and the similarity of object position in *to*-clauses and subjunctive *that*-clauses, whose distribution the *to*-infinitive had started to follow already before the Old English period (Los 2005: 171–177). All of this implies that in some (unattested) prehistoric stage the infinitive must have changed category from noun to verb. In a nutshell, after preposition *to*, the originally derivational suffix *-*anja* (see [32] above) must have competed so successfully with other nominalizing suffixes, that it eventually was added to any verb stem. Accordingly, it came to be viewed as an inflectional rather than derivational morpheme, which entailed that it no longer changed the category of the item it attached to. Thus, the infinitive came to be reanalysed as a verbal, rather than nominal form, and the *to*-infinitive as a whole came to be viewed as a clause, rather than a PP (Los 2005: 192–197).

In the development of the *to*-infinitive from PP to clause, the allative meaning of prepositional *to* (‘towards a goal’) played a crucial role.⁶⁴

64 It should be noted that before the OE period, it was the bare infinitive that was used to express purpose or goal, for example after verbs of motion and posture (Los 2005: 34–42). However, the OE data suggest that the bare infinitive came to be used as an argument of these matrices, expressing simultaneity, rather

Whereas prepositional *to* may indicate a goal situated in either space or time, infinitival *to* typically refers to goals in time. In other words, it has a purposive meaning, adding “prospective relative time reference” (Los 2005: 197). In Gothic, for instance, the *du*-infinitive only functioned as purposive adjunct (Los 2005: 28–31). For English, Los (2005: ch. 2–3) claims that the distribution of the *to*-infinitive must originally have followed that of the purposive *to*-PP, competing in three environments: (i) as purpose adjunct to a verb phrase (VP), (ii) as purpose adjunct⁶⁵ to a noun phrase (NP) (e.g. *anweald* ‘power’, *tima* ‘time’) or adjectival phrase (AP) (e.g. *gearu* ‘ready’), and (iii) as Goal-argument after conative verbs (with meanings like ‘try’), and verbs of persuading and urging (Los 2005: 198–199). In one of the *to*-infinitival constructions involving the adjectives studied here, the *to*-clause is in competition with a *to*-PP, as shown below (cf. Van linden 2010a: 29–30).

Throughout the history of English, the adjectives focused on in this book are found in two types of infinitival constructions. These types are illustrated in (33) and (34).

- (33) type (i): the post-predicate construction (POPC)
 subject + copula + ADJ + *to*-clause with non-subject gap
ða geseah ðæt wif ðæt ðæt treow wæs god to etenne
 then saw that wife that that tree was good to eat
 ‘Then that wife [Eve, AVL] saw that that tree was good to eat’
 (YCOE 1000–1050 Gen 3.6)
- (34) type (ii): the extraposition construction (EC)
 (non-referential subject (*it*)) + copula/V + ADJ + *to*-clause
Forþon hit is god godne to herianne & yfelne
 Therefore it is good good.thing to praise and evil.thing

than a purposive adjunct expressing consecutivity. This category change can only be explained by the verbs of motion and posture changing category themselves, i.e. grammaticalizing from fully lexical verbs into auxiliaries, much like the pre-modals. The bare infinitive’s loss of purposive meaning may further motivate the introduction of another non-finite form in purposive environments, the *to*-infinitive (Los 2005: 40).

65 Although Los makes a clear difference between adjuncts and complements (2005: 34–35), she calls the purposive expressions with NPs and APs in some places adjuncts (2005: 29, 199), but in other places complements (2005: 164, 171).

to leanne

to reproach

‘Therefore, it is good to praise a good thing and to reproach an evil thing’ (YCOE 1050–1099 BedePref 2.10)

In constructions of type (ii), the *to*-infinitive competes with the *that*-clause discussed in section 5.2.1. Just like the *that*-clause, the *to*-clause is found in both mandative and propositional complements, most frequently in the first type. Again, the diachronic data offer evidence in support of the diachronic applicability of the conceptual map, since as of Old English strong adjectives are found with mandative clauses only, whereas weak ones combine with both semantic types. In the remainder of this section, I will discuss the two types of *to*-infinitival constructions with the adjectives studied, and I will relate these types to the diachronic distribution of the *to*-infinitive. In this respect, it will prove useful to compare the development and distribution of the *to*-infinitive constructions with the adjectives to Los’s (2005) findings on verbal complementation with the *to*-infinitive.

The first construction discussed here is the post-predicate construction (POPC) (cf. Biber, Johansson, and Leech 1999: 716) in type (i) above. Most probably it is one of the environments in which the *to*-infinitive originally occurred, as it is in variation with purposive *to*-PPs. Syntactically, this construction consists of a subject, a copular finite, an adjectival subject complement and a *to*-infinitive with a non-subject gap (cf. Callaway 1913: 149–159; Van der Gaaf 1928; Bock 1931; Visser 1972: §940; Mitchell 1985: §928–931; Fischer 1991: 155; Traugott 1992: 249). In this type, the *to*-infinitive functions as complement of the adjective itself (e.g. *good* in [33]), whereas in type (ii), it functions as complement of the matrix clause (e.g. *be good* in [34]). Examples of the POPC are given in (35) and (37). In (36) and (38), comparable examples with purposive *to*-PPs are given.

- (35) *Cuþ ys eac þæt hishyd is bryce hundum & eallum
known is also that his skin is useful dogs.DAT and all.DAT
fiberfetum nytenum wið woles gewinne on
quadruped.DAT animals.DAT against pestilence.GEN hardship on
to done.*

to do

‘It is also known that its skin [i.e. of a badger, AVL] is useful for dogs and all quadruped animals to put on (them) against the hardship of pestilence.’ (YCOE 1000–1050 Med 1.1 [de Vriend] 1.8)

- (36) *Swiþost he for ðider, toeacan þæs landes sceawunge,
Especially he went thither besides the.GENland.GEN seeing*

for þæm horshwælum, for ðæm hie habbað swiþe æþele ban
 for the walruses because they have very costly bone
on hiora toþumþa teð hie brohton sume þæm cyninge,
 in their teeth theteeth they brought some the.DATking.DAT
& hiora hyd bið swiðe god to sciprapum.

and their skin is very good to ship's ropes

'He went thither especially, besides the seeing of the land, for the walruses, because they have very costly bone in their teeth – the teeth, they brought some to the king – and their skin is very good for ship's ropes.' (YCOE 900–950 Or 1 1.14.30)

In (35) and (36), the skin of an animal is said to be useful or good for a specific purpose. In (35), the purpose is conveyed by a *to*-infinitive (*on to donne*), while in (36), it is expressed by a *to*-PP (*to sciprapum*). Arguably, however, this *to*-PP implies an action: the skin of a walrus is good 'for the manufacture of ship's ropes' or good 'to make ship's ropes with' (cf. Van linden 2010a: 31).

(37) *Broðor þa leofestan, ic cyðe þæt þreo þing synt ærest on*
 Brothers the dearest, I proclaim that three things are first in
foreweardum æghwylcum men nyðbehefe to habbanne. I
 agreements each.DAT man.DAT necessary to have One
is geleafa, oðer is hiht, þridde soðlufu.
 is belief, other is hope, third true.love

'Dearest brothers, I proclaim that in agreements three things are

necessary for each man to have first. One is belief, the second is hope, and the third is true love.' (YCOE 950–999 HomS 11.2 [ScraggVerc 3] 1)

(38) *ond þurh heo sende gemænelice þa þing all, þa*
 and throughthem sent commonly the things all, that.REL.PRON
ðe to cirican bigonge & þegnunge nedþearflecu

PRT to church.GEN practice and ministry necessary

wæron, huslfatu & wigbedhrægl & cirican

be.PST.IND, sacramental.vessel and altar.cover and chirch.GEN

frætwednes & biscopgegyrlan & diacongegyrlan.

decoration and episcopal.robess and deacon's.robess

'And he [i.e. Pope Saint Gregory, AVL] commonly sent through them [i.e. Mellitus, Iustus, Paulinus, and Ruffianus, AVL] all the things that were necessary to the practice and ministry of the church, sacramental vessel, altar-cover, decoration of the church,

episcopal robes and deacon's robes.' (YCOE 1050–1099 Bede 1 16.88.31)

In (37) and (38), some things are said to be necessary. Here, the functional similarity between the *to*-infinitive and the *to*-PP is less straightforward. The *to*-PP in (38) does express a purpose (with action nominals *bigonge* and *þegnunge*, and their notional object *cirican* in the genitive case): the things are necessary to the ministry of the church. For the *to*-infinitive in (37), however, a true purposive reading is less suitable. It should also be noted that the things in (37) are not concrete tangible objects like in (38), but rather abstract nouns with a verbal flavour. In Van linden (2008), I have argued that constructions such as (35) with weak adjectives are characteristic-oriented post-predicate constructions, whereas those such as (37) with strong adjectives are activity-oriented ones. In the remainder of this section I will use the label POPC to refer to both subtypes. However, it is only in the characteristic-oriented subtype that the *to*-infinitive competes with a purposive *to*-PP.

Apart from the *to*-PP and *to*-infinitive, there is another expression that originally occurred in the three purposive environments mentioned above (see section 5.2.1), i.e. the 'subjunctive *that*-clause' (Los [2005: 24] uses this term to refer to clauses that have a subjunctive finite form, a 'neutralized' form "that can be expected to be subjunctive because of the putative nature of the clause", or a modal auxiliary – either indicative or subjunctive) (cf. Van linden 2010a: 30). The purposive use must have been its earliest function (also in Gothic, cf. Los [2005: 30]). Los (2005: 172 [39 a–c]) also gives examples of an adjective occurring with the three types of purposive expression, namely *gearu* ('ready'). However, adjectives like *gearu* take *to*-infinitives with a subject gap, whereas adjectives like *good* in (35) take *to*-infinitives with a non-subject gap, cf. the difference between 'eager-constructions' and 'tough-constructions' (Fischer 1991; Fischer, Van Kemenade, and Koopman 2000: 265–266, 280). Los also gives an example of an adjective complemented by a *to*-infinitive with a non-subject gap (*lustfullice þone lichaman mid to gereordianne*, 'desirable to nourish the body with' [GD 13.129.4, H], 2005: 165 [29]). However, it is telling that she provides a functionally equivalent *to*-PP example here (*lustfullice to þæs lichaman gereordunge*, 'desirable for the body's nourishment' [GD 13.129.5, C], 2005: 165 [28]), but no subjunctive *that*-clause alternative. With the adjectives studied here, I did not find any purposive subjunctive *that*-clause either. Clearly, this type of *that*-clause should be distinguished from subclauses of result introduced by *þæt*, typically with adverbs like *swa* ('so') in the matrix, which do not select a specific semantic class of

adjectives.⁶⁶ Together with Los's (2005: 165, 172) data, the adjectival data thus conform to the general syntactic constraint that *to*-infinitives with a non-subject gap never compete with *that*-clauses (cf. Van der Wurff 1990; Los 2005: 204, 266–270).⁶⁷

Nevertheless, the distribution of the subjunctive *that*-clause has played a crucial role in the development of the *to*-infinitive. Although this *that*-clause originally occurred in purposive environments only, it is shown that by the beginning of the Old English period it had already spread to various other environments (cf. Mitchell 1985: §2033; see section 5.2.1), so that its purposive meaning was often reinforced by *to ðon þæt* or *to ðy þæt* (Los 2005: 41–42). An example of a non-purposive construction to which the subjunctive *that*-clause had spread in Old English is the EC discussed above. Importantly, Los (2005: ch. 4–6) contends that the subjunctive *that*-clause set the example for the *to*-infinitive in the prehistoric period, so that the *to*-infinitive's distribution exceeded that of the purposive *to*-PP, and extended to non-purposive environments in Old English, such as the Theme-argument function. Los (2005: 67, 99) argues that the following changes must have taken place before the OE period. First, the *to*-infinitive combining with conative verbs and verbs of persuading and urging was reanalysed from purposive adjunct to Goal-argument. Later, the *to*-infinitive extended to intention verbs other than the conative verbs through

66 The data do include *that*-clauses of result, e.g. with *good* in (ix) below. Such result clauses usually have an indicative, rather than a subjunctive finite form (Traugott 1992: 251). The examples used here, however, have a modal finite verb.

- (ix) *Hwæðer þu wene þæt ænig þing on þisse worulde swa good*
 whether you think.PRS.SBJV that any thing on this world so good
sie þæt hit ðe mæge <forgifan> fulla gesælða?
 be.PRS.SBJV that it you.DAT may.PRS.SBJV give.INF full happiness
 'Whether you think that one thing in this world is so good that it might give you full happiness?' (YCOE 940–960 Bo 34.82.22)
- (x) *gif he bið swa dysig & swa ungewiss þæt he þæt witan ne*
 if he is so foolish and so ignorant that he that know.INF not
mæg
 be.able.PRS.IND
 'If he is so foolish and ignorant that he cannot know that' (YCOE 940–960 Bo 11.26.2)

67 It should also be noted that the adjectives that occurred with purposive subjunctive *that*-clauses (of the *gearu*-type) did not develop the EC (cf. PDE **It is eager to prepare dinner*).

reanalysis⁶⁸ and analogy with the subjunctive *that*-clause, which was already established as Theme-argument of these verbs (Los 2005: 99). Likewise, the use of the *to*-infinitive with verbs of persuading and urging spread to verbs of commanding and permitting (Los 2005: 137) and some types of commissives (Los 2005: 140–146), both taking Theme-arguments. In Early Middle English, the *to*-infinitive won out over the *that*-clause in most environments (Los 2005: ch. 4–6), also in the adjectival EC studied here (see section 5.2.3).

With regard to the adjectival constructions, the changing distribution of the *to*-infinitive explains its occurrence in the second construction to be discussed here: the extraposition construction (EC) (i.e. type [ii] presented above), as in (39) (cf. Mitchell 1985: §1537–1542, 1544–1547; Visser 1972: §903, 908; Traugott 1992: 244).

- (39) *Gif god is and halwendlic to forhæbbenne fram*
 if good is and salutary to refrain from
unalyfedlicum styrungum and for ði hæfð ælc cristen
 unlawful disturbances and therefore has each Christian
sawul mædenes naman, Hwi sind ðonne þa fif underfangene,
 soul virgin.GEN name why are then the five accepted
and þa fif aworpene
 and the five rejected
 ‘If it is good and salutary to avoid unlawful disturbances and therefore each Christian soul has the virgin’s name, why then are the(se) five accepted and those five rejected?’ (YCOE 990–1010 ÆCHom II, 44 328.44)

Unlike the POPC examples in (35) and (37) above, this example has no referential subject in the nominative case, or a surface subject such as (*h*)*it* (see section 5.1.1 for further discussion). Moreover, the *to*-infinitive does not function as a purposive adjunct of the adjective *god*, but rather as a Theme-argument of the impersonal adjectival matrix *god is*. Syntactically, it has no non-subject gap (note that in example [34] of type [ii] given above, the *to*-infinitives have their objects preceding them). The only similarity between the POPC and the EC relates to the interpretation of the implied subject of the *to*-infinitive: in both cases it should be inferred from the context, or, in other words, its interpretation is determined non-

68 Bock (1931) proposes that *to*-infinitival adjuncts after nominal objects were reanalyzed as Theme-argument of the verb (Los 2005: 99).

syntactically (Huddleston and Pullum 2002: 1193). It is important to note that in the EC the *to*-infinitive is in competition with the subjunctive *that*-clause (see section 5.2.1), but no longer with the *to*-PP. We therefore have to conclude that with adjectives – unlike with verbal matrices – we cannot assume a developmental relation between the purposive function of the *to*-infinitive (in the POPC) and its function as Theme-argument (in the EC), as in these functions it never competed with the same types of expression. (Remember that with verbs, the subjunctive *that*-clause with the conative verbs and verbs of persuading and urging formed the middle ground.) Hence, the conclusion urges itself upon us that in some stage the distribution of the *to*-infinitive with adjectival predicates involved analogy with verbal matrices. As will be argued in section 5.2.3, the adjectives began to favour *to*-infinitives by analogy with the increased frequency of *to*-complements with intention and manipulative verbs.

The distribution of the *to*-infinitive and the expressions it competes with have been represented in Figure 13. The full arrows indicate its development from Goal-argument to Theme-argument, as discussed above. The boxes of the adjectival constructions have been put in boldface. The arrow linking the two boxes is dashed and crossed out, reflecting our conclusion that we cannot assume a developmental relation between the POPC and the EC (cf. Van Linden 2010a: 31–33).

In addition to the two main types of *to*-infinitival constructions discussed above, the Old English data also present us with a combined pattern of complementation, introduced by demonstrative *ðæt*. One of the three examples found in Old English is given below.

- (40) *Hwæt la, þæt is ofer eal gemet to sceawigenne & to*
 oh that is over all suitable to behold and to
smægenne, þæt þa earman fyrenfullan sculon sarige
 reflect.on that the poor sinful shall.PRS.IND sorrowfully
aswæman fram ansyne ures drihtnes & fram his
 grieve.INF from face our.GEN lord.GEN and from his
haligra & fram þam wuldre heofona rices
 holiness and from the glory heavens.GEN kingdom.GEN
 ‘That is overall suitable to behold and to reflect upon, that the poor
 sinful shall grieve sorrowfully from the face of our lord, and from
 his holiness and from the glory of heaven’s kingdom’ (YCOE 950–
 999 HomU 8 [ScraggVerc 2] 24)

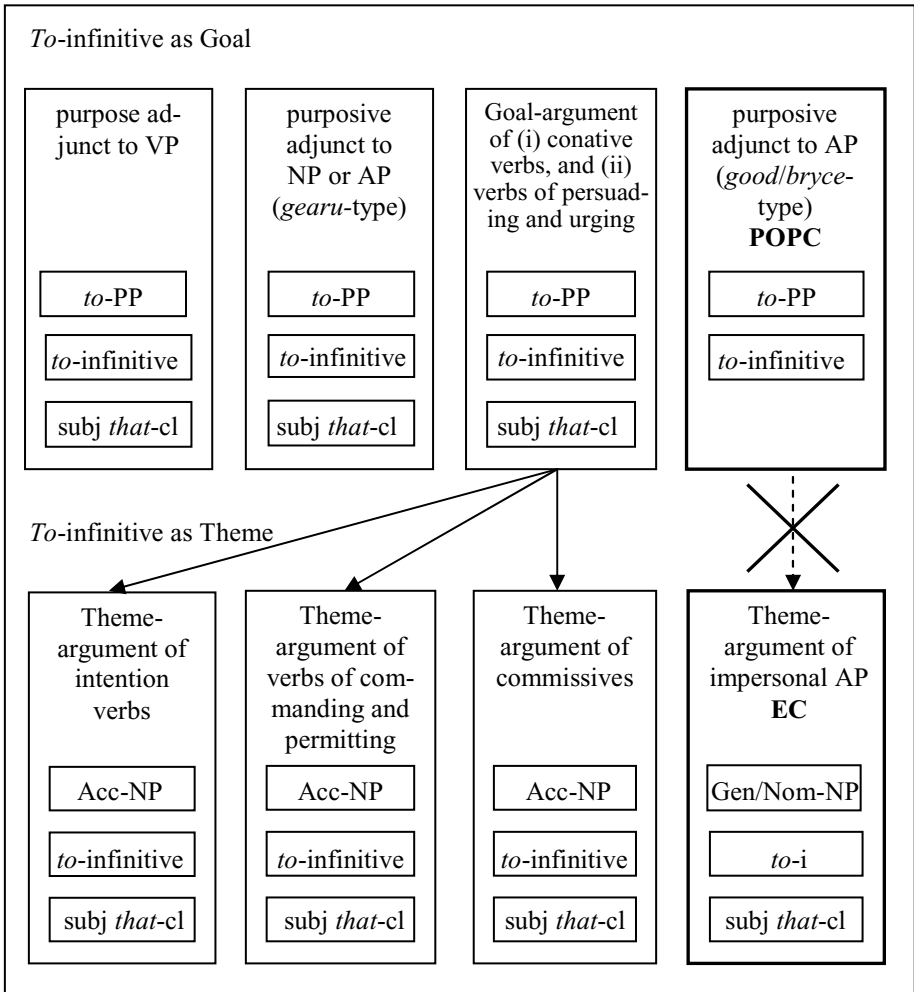


Figure 13. The distribution of the *to*-infinitive and its competitors in its development from expression of Goal to Theme-argument

In (40), the adjective *gemet* is construed with two coordinated *to*-clauses, which in turn are complemented by a *that*-clause. It can be argued that it patterns like a POPC in that it has a referential subject, a copular finite, an adjectival subject complement and two *to*-infinitives with a non-subject gap. However, the syntactic subject *þæt* is referential in a specific way. Unlike in example (35) above, it does not refer to an extra-linguistic entity (cf. *skin* in [35]), but it cataphorically refers to the *that*-clause that follows the *to*-infinitives (see section 5.2.1). Both the anticipatory demonstrative *þæt*

and the *that*-clause itself function as the implied object of the *to*-infinitives. Therefore, this construction can be thought of as the precursor of combined PDE patterns, like, for instance, in (41).

- (41) However, before becoming too excited about such knowledge, it is **essential** to remember that most of the research has been conducted in one particular country, namely in the USA, mainly in primary school classrooms, in various grades, (CB, ukmags)

In (41), the *to*-infinitive clearly functions as subject clause (hence, it is a Theme-argument), which in turn is construed with an object *that*-clause. However, for the OE example above, it is hard to decide whether the *to*-infinitives also function as Theme-arguments, or rather as purposive adjuncts. Because of their doubtful status, the three examples of this type found in Old English have not been included in the tables in the remainder of this chapter – neither in Table 16 (section 5.1.1) nor Table 17 (section 5.1.2).

So far, I have presented two main types of *to*-infinitival constructions with the adjectives studied here, i.e. the POPC and EC, and I have related these to the diachronic distribution of the *to*-infinitive as described by Los (2005). Below, I present the results of my diachronic corpus study, and I discuss the absolute and relative frequencies of the two types of infinitival construction in the historical corpora. The data of the EC include both copular and transitive verb constructions (see sections 5.1.1 and 5.1.2). In Table 27, I present the absolute and relative frequencies of the constructions with both strong and weak adjectives. In Table 28, I present the normalized frequencies per 100,000 words. The tables distinguish between mandative and propositional *to*-clauses. However, as in the case of the finite complements (see section 5.2.1), no distinction is made between *to*-clauses in dynamic or deontic expressions, as these are not formally different. It should be noted that Tables 27 and 28 also include a more specific type of *to*-clause, namely *for...to*-infinitives, which are found across the same types of construction (POPC and EC) and the same semantic complement types (mandative and propositional). Furthermore, constructions with preposed *to*-infinitives have been excluded so as to guarantee comparability across the various periods and also with the *that*-clauses (see section 5.2.3). Moreover, *to*-clauses in subject position are very infrequent throughout the diachronic stages, and they carry a more marked pattern of information distribution (cf. Kaltenböck 2000). Finally, for the PDE data, no POPCs have been recorded here, but more details can be found in Van

linden (2008: 259–262). In any case, the type has become rather marginal in Present-day English.

In general, it can be seen in Table 27 that the relative shares of the two infinitival constructions change through time. The share of the POPC gradually decreases from 45% in EOE to 7.81% in LModE (with a sudden peak of 68.75% in LOE, but this percentage stands out in contrast to a low normalized frequency of 0.97, see Table 28). Inversely, the EC, which came into the language later, shows a rise in relative frequency, from 55% in EOE to 92.19% in LModE.

In order to illustrate the diachronic applicability of the conceptual map, Tables 27 and 28 include the distinction between mandative and propositional complements, much like Tables 18 to 21, 23, 25 and 26 with *that*-clauses above. As with the *that*-clauses, it can be seen that only weak adjectives are found with propositional *to*-infinitives. An early example is given below.

- (42) *Ʒa cwæð Petrus to him, Drihten, **god** ys us her to*
 Then said Petrus to him Lord good is us.DAT here to
beonne; Gyf þu wylt uton wyrcean
 be if you want.PRS.IND go.PRS.SBJV.PL make.INF
her þreo eardungstowa
 here three dwelling.places
 ‘Then Peter said to him: “Lord, it is good for us to be here; if you want it, let us make here three dwelling-places” (YCOE 1000–1050 Mt [WSCp] 17.4)

In this example, the SoA in the *to*-clause is actualized at the moment of speaking. The speaker, i.e. Peter, is ‘here’ when he conveys his evaluation of this SoA to the Lord. More generally, this example also shows that the *to*-infinitive can already be used to express simultaneity in Old English. As can be seen in Tables 27 and 28, the relative share of propositional *to*-infinitives remains very small throughout the various periods (again, we see a peak in LOE [18.75%], but this is counterbalanced by a less exceptional normalized frequency of 0.26). I will discuss infinitival propositional complements in more detail in sections 6.2.2, 6.4.2, 8.1.4 and 8.1.5.

If we focus on the mandative complements only, however, the data do not differ so much for weak and strong adjectives. In Table 29, the propositional complements have been excluded, so that the relative shares of the construction types found with mandative complements become comparable. It can be seen that these are different for the two lexico-semantic classes of adjectives especially in the EOE and EME period. In EOE, weak

adjectives occur more often in POPCs than strong ones, whereas these are more frequent in ECs. In EME, the differences in distribution are due to the very low frequency of constructions with strong adjectives. Whereas these only occur in POPCs, the relative shares of constructions with weak adjectives are more in line with those of the later periods. From LME onwards, the distribution of constructions is very similar for the two classes of adjectives. It should be noted, however, that the POPCs with weak adjectives are not always mandative in sense, such as, for example, (35) above.

A further aspect of the *to*-infinitival complements that has not been treated here so far is the relation between the form *to* and the infinitival form, and the formal properties of the latter. In the last part of this section, I will discuss how the *to*-infinitive developed the formal properties it has in Present-day English, drawing on insights from grammaticalization studies.

Up to the Early Middle English period, the development of the form *to* accompanying the infinitival form is commonly viewed as a process of grammaticalization, in which the item changed from a preposition to an infinitival marker. Morphologically, it changed from a free word to a clitic (cf. Jespersen (1974 [1927]: 10–11; Mustanoja 1960: 514; Haspelmath 1989; Fischer 1997, 2000, 2003; Los 2005: 225–230). At the beginning of the Old English period already, the form *to* was the only preposition that could be used with the inflected infinitive, and it clearly formed a unit with the infinitive (Mustanoja [1960: 515] and Fischer [2003: 452] also mention the use of the prepositions *æt* and *till*, but these are Scandinavian loans, restricted to the Northern dialects). It thus had ‘scope’ in the sense of Lehmann (1985) only over the infinitive. As there are no data from the pre-Old English stage, it cannot be decided whether these findings are the result of an increase in paradigmaticity and bondedness, and a reduction in scope of *to*, i.e. three out of six parameters involved in grammaticalization as distinguished by Lehmann (1985) (cf. Fischer 2003: 452–454). The following changes, however, can be traced in the Old and Middle English data, and can hence be regarded as evidence for the grammaticalization of *to*. Most importantly, *to* became both phonetically and semantically reduced (i.e. loss of ‘integrity’, cf. Fischer 1997: 270–271). The phonetic reduction of *to* to *te* is illustrated in the Middle English example in (43) below. Apart from *te*, spelling variant *t’* is also attested (Fischer 2003: 452). The finding that there are no *te*-spellings in Old English can also be attributed to “the strength of the traditional spelling-system (the *Schriftsprache*)” (Fischer 1997: 270). With French becoming the official language in the Middle English period, there no longer was a written standard that would reject *te*-spellings (Los 2005: 228). Therefore, it may very well have been the case that the phonetic reduction of *to* began in Old English already.

Table 27. The development of *to*-infinitival constructions with strong and weak adjectives (absolute frequencies and relative shares)

Type of adj	Comp: sem	Type of cxn	750–950		950–1150		1150–1350		1350–1500		1500–1710		1710–1920		1990–1995	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
strong	mand	POPC	2	10.00	4	25.00	3	16.67	6	8.70	20	7.52	40	2.42	0	-
		EC	5	25.00	1	6.25	0	-	16	23.19	52	19.55	776	46.97	718	32.65
		Total	7	35.00	5	31.25	3	16.67	22	31.88	72	27.07	816	49.39	718	32.65
weak	mand	POPC	7	35.00	7	43.75	4	22.22	12	17.39	46	17.29	89	5.39	0	-
		EC	6	30.00	1	6.25	10	55.56	34	49.28	148	55.64	725	43.89	1322	60.12
		Total	13	65.00	8	50.00	14	77.78	46	66.67	194	72.93	814	49.27	1322	60.12
	prop	EC	0	-	3	18.75	1	5.56	1	1.45	0	-	22	1.33	159	7.23
Total		POPC	9	45.00	11	68.75	7	38.89	18	26.09	66	24.81	129	7.81	0	-
		EC	11	55.00	5	31.25	11	61.11	51	73.91	200	75.19	1523	92.19	2199	100.00
		Total	20	100	16	100	18	100	69	100	266	100	1652	100	2199	100

Table 28. The development of *to*-infinitival constructions with strong and weak adjectives (relative frequencies per 100,000 words)

Type of adj	Comp: sem	Type of cxn	750–950	950–1150	1150–1350	1350–1500	1500–1710	1710–1920	1990–1995
			N	N	N	N	N	N	N
strong	mand	POPC	0.66	0.35	0.85	0.75	1.11	0.27	-
		EC	1.65	0.088	-	1.99	2.90	5.18	1.71
		Total	2.30	0.44	0.85	2.74	4.01	5.45	1.71
weak	mand	POPC	2.30	0.62	1.14	1.49	2.56	0.59	0.00
		EC	1.98	0.088	2.84	4.23	8.25	4.84	3.14
		Total	4.28	0.71	3.98	5.72	10.81	5.44	3.14
	prop	EC	-	0.26	0.28	0.12	0.00	0.15	0.38
Total		POPC	2.96	0.97	1.99	2.24	3.68	0.86	-
		EC	3.63	0.44	3.13	6.34	11.15	10.17	5.22
		Total	6.58	1.41	5.11	8.58	14.83	11.03	5.22

Table 29. The development of mandative *to*-infinitival constructions with strong and weak adjectives (absolute frequencies and relative shares)

Type of adj	Type of cxn	750–950		950–1150		1150–1350		1350–1500		1500–1710		1710–1920		1990–1995	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%
strong	POPC	2	28.57	4	80.00	3	100	6	28.57	20	27.78	40	4.90	0	-
	EC	5	71.43	1	20.00	0	-	15	71.43	52	72.22	776	95.10	718	100
	Total	7	100	5	100	3	100	21	100	72	100	816	100	718	100
weak	POPC	7	53.85	7	87.50	4	28.57	12	26.09	46	23.71	89	10.93	0	-
	EC	6	46.15	1	12.50	10	71.43	34	73.91	148	76.29	725	89.07	1322	100
	Total	13	100	8	100	14	100	46	100	194	100	814	100	1322	100

Table 30. The development of mandative *to*-infinitival constructions with strong and weak adjectives (relative frequencies per 100,000 words)

Type of adj	Type of cxn	750–950		950–1150		1150–1350		1350–1500		1500–1710		1710–1920		1990–1995	
		N		N		N		N		N		N		N	
strong	POPC	0.66		0.35		0.85		0.75		1.11		0.27		-	
	EC	1.65		0.088		-		1.99		2.90		5.18		1.71	
	Total	2.30		0.44		0.85		2.74		4.01		5.45		1.71	
weak	POPC	2.30		0.62		1.14		1.49		2.56		0.59		-	
	EC	1.98		0.088		2.84		4.23		8.25		4.84		3.14	
	Total	4.28		0.71		3.98		5.72		10.81		5.44		3.14	

- (43) *Wa zeu ðe seggeð ðat itis god te bizeten*
 woe you.DAT PRT(REL) says that itis good to get
michel eihte, ðe ne mai bien bizeten
 much property PRT(REL)not may.PRS.IND/SBJV be.INF gotten
wið-uten unrihtwisnesse!
 without unrighteousness
 ‘Woe is (to) you that say that it is good to get much property,
 which cannot be gotten without unrighteousness!’ (PPCME *a1225*
 [c1200] Vices & V. [1] [Stw 34] 79)

The semantic reduction of *to* involved a weakening of its purposive meaning. This weakening is evident from the changing distribution of the *to*-infinitive in Old English. As discussed above, in the earliest data *to*-infinitives are not only found in purposive post-predicate constructions (cf. [33]), but also in mandative complements (cf. [34]), expressing potential actions, and even in propositional complements (cf. [42]), locating the dependent event as simultaneous with the matrix event. In Middle English, the *to*-infinitive is occasionally found after verbs of motion and posture, with which the bare infinitive was the rule in Old English. Like propositional complements, the expressions with verbs of posture involve simultaneity rather than consecutivity (cf. Haspelmath 1989: 297–301; Fischer 2000: 156; see note 64). These findings may thus explain why in Middle English the form *to* is often strengthened by an additional preposition, *for*, to express purposive meaning (Visser 1972: §949; Fischer 1997: 271; Miller 2002: 193). An example of a purposive POPC with a *for to*-infinitive is given below.

- (44) *But the children of Israel putten þerejune a tree &*
 but the children of Israel put therein a tree and
anon thewater was swete & gode for to drynke.
 immediatelythewater was sweet and good for to drink
 ‘But the children of Israel put a tree therein, and immediately the
 water was sweet and good to drink’ (PPCME ?*a1425* [c1400]
 Mandev.[1] [Tit C.16] 37)

This example, similar to (33) above, expresses for which purpose the water is good, i.e. to serve as drinking water. Los (2005: 220–225) also provides a further explanation for the emergence of *for*: it may have answered the need for an overt complementizer signalling the left edge of the infinitival

clause, especially in cases with a *for* ^ Object ^ *to* ^ Verb order (in Southern dialects).⁶⁹ In any case, we can assume that *to* was desemanticized to a certain extent, so that the *to*-infinitive could exceed the distribution of the purposive *to*-PP and mirror that of the subjunctive *that*-clause. When used as a goal adjunct (to a verb, NP or AP), the *to*-infinitive was often reinforced by *for*.

However, in the course of the Middle English period, the *for to*-infinitive in turn spread beyond its original purposive distribution, and began to follow that of the *to*-infinitive (Mustanoja 1960: 514), at least partly because of the loss of OV word order (in *for* ^ Object ^ *to* ^ Verb sequences, the object came to follow the infinitive, so that *for* attached to *to*, giving rise to the complex infinitival marker *forto*) (Los 2005: 223–225). In the data, the *forto*-infinitive is also found in the EC, as in (45) below.

- (45) *Perfore it is good þanne for to stynte fro multitude of
therefore it is good then for to abstain from multitude of
wordis, and þinke oonli in þin herte as esily as þou
words and think only in yourheart as easily as you
maist.*

may.PRS.IND

‘Therefore it is good then to abstain from a multitude of words, and (to) think only in your heart as easily as you may.’ (PPCME a1450 [a1396] Hilton CPerf. [Paris angl.41] 8)

In this example, the *forto*-infinitive clause functions as a Theme-argument of the adjectival matrix *it is good*, much like the *to*-infinitive clause in (34) above (cf. Visser 1972: §909). Thus *forto* had become functionally equivalent to *to* (cf. Miller 2002: 191–193), and eventually *to* ousted newcomer *forto* in most dialects (remember that with the typological shift from SOV to SVO in Middle English, the need for a marker of the left edge of the infinitival clause had disappeared as well) (Los 2005: 225). Strikingly, the Middle English data also include three instances of bare infinitives in the EC (cf. Fischer 1992: 319), as in *Hit is nedeful to hym be wise & warre þat schal an hors bye* ‘It is needful to him that will buy a horse to be wise and mindful’ (PPCME a1450 *Treat.Horses* [Sln 2584] 85). These examples are subsumed under the *to*-infinitives in the analyses.

69 In addition to *for*, the *to*-infinitive is also found after other prepositions in Middle English, such as *of* and *with* (see Fischer 2000: 157 [5ab]). These findings confirm that *to* does not function as a preposition anymore, but rather as an infinitival marker.

Whereas the development of *to* up to Early Middle English can be described as a process of grammaticalization, a number of developments in Late Middle English and Early Modern English indicate that the process was reversed to a certain extent, i.e. that *to* degrammaticalized. The emergence of split infinitives and second conjuncts without *to* in sequences of coordinated *to*-infinitives (cf. [46] below) (Los 2005: 211–215), as well as the loss of the *to*-infinitive after prepositions like *for*, *with* or *of* show that the form *to* changed from a clitic into a free word, and that its ‘scope’ (in the sense of Lehmann 1985) increased rather than decreased (Fischer 2000, 2003; Los 2005: 227–229). Consequently, *to* also showed a decrease in bondedness with the infinitive. Fischer (1997: 155; 2003: 459) argues that the loss of *for* – which was introduced to reinforce *to*’s original purposive meaning – indicates that *to* even regained some of its original meaning. However, her arguments are not conclusive (for a discussion, see Los 2005: 229). Moreover, the finding that the *to*-infinitive was used in the same non-purposive environments in Old and Middle English also goes against a re-semanticization account. I thus conclude with Los that

the appearance of *for* may be as much a case of the renewal of purposive force as of a need to mark the left edge of the clause; its disappearance is more likely to be due to its merger with *to* into an infinitival marker *forto*, and to the loss of its original role as left-edge marker after the OV/VO change, than to a consistent pattern of degrammaticalization. The purposive force was later restored by other expressions, e.g. *in order to*. (Los 2005: 229)

In the Early Middle English period, the *to*-infinitive became slightly more nominal in character, as it began to occur in clause-initial subject position, just like the subjunctive *that*-clause (Fischer 2003: 457; Los 2005: 173). However, it was soon replaced by the gerund in this position, which enabled the *to*-infinitive to develop a more verbal status again. The appearance of a few new structures in Middle English indicates that the *to*-infinitive did acquire a fuller verbal range. Fischer (2003: 457) and Los (2005: 205) mention the emergence of independently negated *to*-infinitives, perfective *to*-infinitives, passive *to*-infinitives, and *to*-infinitival accusative-and-infinitive-constructions (also termed ‘Exceptional Casemarking’ [ECM] constructions),⁷⁰ as in *we believe her to be honest*, in which the *to*-

70 However, Los (2005: 205) notes that the absence of independently negated *to*-infinitives, perfective *to*-infinitives and passive *to*-infinitives in OE cannot entail that they were structurally impossible. The ECM constructions, by con-

clause is not controlled by matrix elements (Mustanoja 1960: 526–527; Miller 2002: ch. 7). Of these new structures, this study will briefly deal with the perfective *to*-infinitive in the next chapter (see section 6.2.2).

A final development to be discussed here is the loss of the inflectional ending of the *to*-infinitive. In Old English texts, the *to*-infinitive appears fairly consistently with *-enne* or *-anne*. From the Middle English period onwards, however, we find spellings in *-en* and *-e*, as can be seen in examples (43) to (45) above, which may indicate that the original ending in *-enne* was not phonologically present anymore (Los 2005: 214). Another early example of *-e*-spelling is given below.

- (46) *Gode itis to shryue to our Lord, and hezestlich singe*
 good itis to confess to our Lord, and most.solemnly sing
to by name
 to your name
 ‘It is good to confess to our lord and to sing most solemnly to your name.’ (PPCME c1350 MPPsalter [Add 17376] 113)

The phonetic reduction of the original *to*-infinitival ending decreased the formal difference between bare and *to*-infinitives in Middle English. Since in Middle English the distribution of the two infinitives had become rather clear, the omission of *to* before the second conjunct of coordinated *to*-infinitives, as in (46) above, did not lead to ambiguity, and this situation has not altered up to Present-day English (cf. Los 2005: 214).

In conclusion, the discussion above has shown that the adjectives studied here occur in two types of *to*-infinitival constructions throughout the history of English, namely post-predicate constructions (POPCs) and extra-position constructions (ECs). The development of the *to*-infinitive from purposive adjunct to Theme-argument as discussed by Los (2005) suggests that the POPC must have been the earliest construction. Consistent with this suggestion, the diachronic corpus data showed that the relative share of this construction type is largest in the earliest periods, and afterwards steadily decreases. The EC, in which the *to*-infinitive functions as Theme, emerged later than the POPC, but it is attested in the Early Old English data already. In the following periods, its relative share increases rapidly, and from Middle English it clearly predominates. In this construction, the *to*-infinitive is in competition with the (subjunctive) *that*-clause. In section

trast, were structurally impossible partly because of the OV word order. Thus, only the emergence of these constructions can be seen as a genuine change.

5.2.3, it will be shown that the *to*-clause gained in frequency as Theme-argument at the expense of the *that*-clause during the ME period.

In addition, I have discussed the development of the *to*-infinitive from the perspective of grammaticalization. I have elaborated on the relation between the form *to* and the infinitive, accounting, for instance, for the emergence of *forto*-infinitives in the Middle English data, and the formal properties of the *to*-infinitive in Present-day English.

Bearing on the central argument of this book, the data on the *to*-infinitives in ECs have also indicated the validity of the conceptual map for diachronic analysis. They have shown that strong adjectives are found with mandative complements only, whereas weak adjectives pattern with both mandative and propositional *to*-clauses from Old English onwards. In the discussion above, the *to*-clauses have been analysed into these two semantic types rather rigorously, much like the *that*-clauses in section 5.2.1. However, in quite a few cases with weak adjectives, it might be more appropriate to analyse the constructions as bridging contexts (Evans and Wilkins 2000: 550), which contextually support both a mandative and propositional reading. Like in section 5.2.1, I have analysed these cases here as mandative constructions, as these constitute the most unmarked option. A more detailed discussion of the characteristics of such bridging contexts will follow in sections 6.4.2 and 8.2.

5.2.3. The distribution of *that*-clauses and *to*-clauses

Now that the origin and development of the two formal types of complement have been discussed, it is possible to compare the diachronic distribution of the *that*-clauses and *to*-clauses, including the *for...to*-infinitives. This section focuses on the development of that distribution in the extraposition construction with both copular and transitive verbs. It will be shown that with the adjectival matrices a major change occurs in the distribution of clausal complements during the Middle English period. The data on the most frequent semantic type, i.e. the mandative clause, bear out that the *to*-clause supersedes the *that*-clause from Early Middle English onwards, as has been observed for verbal matrices with a volitional flavour by Los (2005). This distributional change is explained by analogy with the verbal constructions. I will also point out that this replacement has never been completed. Rather, the *to*-infinitive has kept roughly a 3:1 ratio to the *that*-clause from Early Modern up to Present-day English. To account for the Modern English distribution, I will invoke lexical determination and discourse factors such as information structure.

It has been noted above that in the EC, the *that*-clause is in competition with the *to*-infinitive, both functioning as Theme-argument of an impersonal phrase. The availability of the two formal types can be illustrated by Old English examples from the *West Saxon Gospels* in which the same proposition is coded by a *to*-clause in Matthew's gospel, and by a *that*-clause in Luke's and Mark's texts. The *to*-clause example has been given in (42) in section 5.2.2, and is repeated here in (47). The *that*-clause construction in Mark's texts is given in (48).

- (47) *Ɔa cwæð Petrus to him, Drihten, god is us her to*
 Then said Petrus to him Lord good is us.DAT here to
beonne; Gyf þu wylt uton wyrcean her
 be if you want.PRS.IND go.PRS.SBJV.PL make.INF here
þreo eardungstowa
 three dwelling.places
 'Then Peter said to him: "Lord, it is good for us to be here; if you want it, let us make here three dwelling-places"' (YCOE 1000–1050 Mt [WSCp] 17.4)
- (48) *Ɔa andswarode Petrus him & cwæð, Lareow, god is*
 Then answered Peter him and said teacher good is
þæt we her beon; & uton wyrcean her
 that we here be.PRS.SBJV and go.PRS.SBJV.PL make.INF here
þreo eardungstowa
 three dwelling.places
 'Then Peter answered him and said: "Teacher, it is good that we are here and let us make here three dwelling-places"' (YCOE 1000–1050 Mk [WSCp] 9.5)

The two complement constructions above express the same meaning, yet they are coded by different formal means. They are non-modal evaluative expressions with a propositional complement (the SoA in the complement is actualized at the moment of speech/evaluation, see section 5.2.2, example [42]), which takes the form of a *to*-clause in (47) and a subjunctive *that*-clause in (48). It is the subjunctive *that*-clause that was the original complement type in the ECs with the adjectives studied here (cf. section 5.2.2). The *to*-infinitive began to mirror the distribution of the subjunctive *that*-clause already before the Old English period. The diachronic data show that in the Middle English period, the *to*-infinitive also started to replace the subjunctive *that*-clause in the construction studied here. In Table 31, I present the absolute frequencies and relative shares of the two formal types across the various periods. In Table 32, I present their normalized frequen-

cies per 100,000 words. As the *that*-clauses found in the diachronic corpora invariably occur in extraposed position, the data of the *to*-infinitive have also been restricted to extraposed clauses (cf. section 5.2.2).

Table 31 indicates that of the two semantic types of complement, mandative clauses show the most marked development. *To*-clauses started to replace *that*-clauses in Early Middle English, so that from Late Middle English onwards the *to*-clause predominates. Propositional complements are very infrequent up to Early Modern English. For Late Modern and Present-day English, it can be noted that they seem to have retained the *that*-clause to a larger extent than the mandative complements. In Late Modern English the propositional complements have a 31.25% to 68.75% ratio of *that*-clauses versus *to*-clauses, whereas the mandative ones (with both strong and weak adjectives) show a 20.16% to 79.84% ratio. In Present-day English, propositional complements even have an equal distribution of *that*- and *to*-clauses, whereas the mandative ones show a ratio of 28.32% to 71.68%. In the next chapter, I will explain why the weak adjectives tend to preserve *that*-clauses in propositional complements (section 6.2.2). In the remainder of this section, I will focus on mandative complements.

The figures in Table 31 show that with mandative complements the overall predominance of *that*-clauses in Old English changes to an almost equal distribution in Early Middle English, and a predominance of *to*-clauses from Late Middle English onwards (cf. Van linden 2010a: 24–29). The data thus confirm the innovative status of the *to*-infinitive, which gradually replaces the older variant, the *that*-clause. Fisher's exact tests indicate that the increase of *to*-infinitives from LOE to EME is highly statistically significant ($p=1.672E-06$), whereas their increase from EME to LME is not ($p=0.3125$). The change is evidenced by the following examples, in which (49) dates from LOE and is construed with a subjunctive *that*-clause, whereas (50) dates from LME, and is construed with a *to*-clause.

- (49) *He andwyrde; Nis na god þæt man nyme his*
 he answered not.is not good that one take.PRS.SBJV his
berna hlaf. and awurpe hundum;
 children.GEN bread and throw.PRS.SBJV dogs.DAT
 'He answered: "It is not good that one should take the bread of his children and throw it to the dogs"' (YCOE 990–1010 ÆCHom II, 8 67.16)
- (50) *And Crist answeride and seyde 'Hit is not good to take þe*
 and Christ answered and said it is not good to take the
breed þat falluþ to children, and ȝyuen hit to
 bread that.REL.PRON belongs to children and give it to

howndes to ete fro þese children.
 dogs to eat from these children

‘And Christ answered and said: “It is not good to take the bread that belongs to children from these children and give it to dogs to eat.”’ (PPCME ?a1425 Wycl.Serm. [Add 40672] 401)

Both examples are mandative constructions – they are even translations of the same Bible verse, but they feature a different formal type of complement. Examples like these illustrate that the *to*-infinitive replaced the *that*-clause in the ME period.

The same shift in relative frequency of *that*- and *to*-clauses has been found with verbal constructions by Los (2005). Showing that the *to*-infinitive rises in frequency after intention and manipulative verbs at the expense of the subjunctive *that*-clause (for examples of these verbs, see Figure 14), Los (2005: 185–189) refutes the formerly held view that the *to*-infinitive replaced the bare infinitive (e.g. Sweet 1903: 118; Callaway 1913; Jespersen 1940: 10–11; Mustanoja 1960: 514; Visser 1972: §897; Lightfoot 1979: 190; Jarad 1997: 32). The shift is exemplified by the following examples from two manuscripts of Gregory’s *Dialogues* (Los 2005: 179–185).

- (51) *Forþon þe he gewilnode, þæt he hæfde lof*
 because [PRT] he desired that he have[.PST.IND/SBJV] glory
& herenesse þæs clænan lifes
 and praise the[.GEN]clean[.GEN] life[.GEN]
 ‘because he desired that he might have glory and praise for a clean life’ ([870–890] GD 8.117.30, C, cited in Los 2005: 181 [49])
- (52) *forþam þe he gewilnode to hæbbenne þæt lof &*
 because [PRT] he desired to have the glory and
herunge his mæran drohtnunge
 praise his[.DAT]excellent[.DAT]conduct[.DAT]
 ‘because he desired to have the glory and praise for his excellent conduct’ ([950–1050] GD 8.117.30, H, cited in Los 2005: 182 [50])
- (53) *þæt hi wæron genydede..., þæt hi scolden niwe wisan*
 that they were forced that they should new ways
hycgan & smeagean
 consider[.INF]and think[.INF]
 ‘that they were forced that they should consider and adopt new ways’ ([870–890] GD 2 [C] 3.104.20, cited in Los 2005: 183 [52])

Table 31. The development of the distribution of *that*- and *to*-clauses (absolute frequencies and relative shares)

Comp: sem	Type of adj	Comp: form	750–950		950–1150		1150–1350		1350–1500		1500–1710		1710–1920		1990–1995	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
mand	strong	<i>that</i>	22	81.48	21	95.45	1	100	5	23.81	30	36.59	171	18.06	331	31.55
		<i>to</i>	5	18.52	1	4.55	0	-	16	76.19	52	63.41	776	81.94	718	68.45
		total	27	100	22	100	1	100	21	100	82	100	947	100	1049	100
	weak	<i>that</i>	17	73.91	47	97.92	9	47.37	24	41.38	73	33.03	208	22.29	475	26.43
		<i>to</i>	6	26.09	1	2.08	10	52.63	34	58.62	148	66.97	725	77.71	1322	73.57
		total	23	100	48	100	19	100	58	100	221	100	933	100	1797	100
total	<i>that</i>	39	78.00	68	97.14	10	50.00	29	36.71	103	33.99	379	20.16	806	28.32	
	<i>to</i>	11	22.00	2	2.86	10	50.00	50	63.29	200	66.01	1501	79.84	2040	71.68	
	total	50	100	70	100	20	100	79	100	303	100	1880	100	2846	100	
prop	weak	<i>that</i>	2	100	9	75.00	0	-	2	66.67	6	100	10	31.25	158	49.84
		<i>to</i>	0	-	3	25.00	1	100	1	33.33	0	-	22	68.75	159	50.16
		total	2	100	12	100	1	100	3	100	6	100	32	100	317	100

Table 32. The development of the distribution of *that*- and *to*-clauses (relative frequencies per 100,000 words)

Comp: sem	Type of adj	Comp: form	750–950		950–1150		1150–1350		1350–1500		1500–1710		1710–1920		1990–1995	
			N		N		N		N		N		N		N	
mand	strong	<i>that</i>	7.24		1.85		0.28		0.62		1.67		1.15		0.79	
		<i>to</i>	1.65		0.088		-		1.99		2.90		5.18		1.71	
		total	8.89		1.94		0.28		2.61		4.57		6.33		2.49	
	weak	<i>that</i>	5.60		4.14		2.56		2.99		4.07		1.39		1.13	
		<i>to</i>	1.98		0.088		2.84		4.23		8.25		4.84		3.14	
		total	7.58		4.23		5.40		7.22		12.32		6.23		4.27	
prop	weak	<i>that</i>	0.66		0.79		-		0.25		0.33		0.067		0.38	
		<i>to</i>	-		0.26		0.28		0.12		-		0.15		0.38	
		total	0.66		1.05		0.28		0.37		0.33		0.22		0.75	

- (54) *Þæt hi... wæron geneadode niwe þing to smeagenne*
 that they were forced new things to think
 ‘that they ... were forced to adopt new things’ ([950–1050] GD 2
 [H] 3.104.16, cited in Los 2005: 183 [53])

Examples (51) and (52) contain the intention verb *gewilnian*, while (53) and (54) have *niedan/neadian*, a verb of persuading and urging. The Theme-argument of both verb classes takes the form of a subjunctive *that*-clause in the earlier manuscript (C), cf. (51) and (53), whereas it is expressed by *to*-clauses in the later manuscript (H), cf. (52) and (54). In addition to comparison of manuscripts, Los (2005) also gives quantitative evidence for the replacement of the *that*-clause by the *to*-infinitive. Her data, drawn from the Brooklyn-Geneva-Amsterdam-Helsinki Parsed Corpus of Old English and the Middle English PPCME (Los 2005: 185), are summarized in Table 33 below. This table includes Los’s (2005) findings about the *to*-infinitive functioning as complement of intention verbs and manipulative verbs, the latter covering verbs of persuading and urging as well as verbs of commanding and permitting.⁷¹

Table 33. The distribution of mandative *that*- and *to*-clauses with verbal and adjectival matrices in Old English and Early Middle English (verbal data from Los 2005: 186, Table 7.6) (cf. Van linden 2010a: 28)

Type of matrix	Type of compl	EOE 750–950		LOE 950–1150		Total OE 750–1150		EME 1150–1350	
		n	%	n	%	n	%	n	%
verb	<i>that</i>	352	85.44	492	85.71	844	85.60	160	37.21
	<i>to</i>	60	14.56	82	14.29	142	14.40	270	62.79
	total	412	100.00	574	100.00	986	100.00	430	100.00
adjective	<i>that</i>	39	78.00	68	97.14	107	89.17	10	50.00
	<i>to</i>	11	22.00	2	2.86	13	10.83	10	50.00
	total	50	100.00	70	100.00	120	100.00	20	100.00

It is clear from the figures that these complements show a rather “abrupt jump in the ratio of *to*-infinitives to subjunctive clauses” (Los 2005: 188), from 14.40% in OE to 62.79% in EME. The adjectival complements, how-

71 It should be noted that Los’s (2005: 185–186) data include “only subjunctive *that*-clauses in which the subject is identical to the subject of the matrix clause in the case of the intention group (‘subject control’), or to the object of the matrix in the manipulatives (‘object control’), and in that sense compatible with *to*-infinitives, which are always controlled.”

ever, show a slightly less abrupt development, from 10.83% in OE to 50.00% in EME (this increase is also statistically significant: Fisher's exact $p=0.0001381$). As the complements of the verbal constructions are semantically very similar to the mandative complements of the adjectival ones studied here, we can assume that, even though the adjectival complements are much less frequent than the verbal ones, they are nevertheless very comparable to Los's (2005) findings, and together these data testify to an important ongoing change in the clausal complementation system.

As suggested by the description of the types of *to*-infinitival construction found with the adjectives studied here (section 5.2.2), the rise of the *to*-infinitive in mandative expressions should be explained by analogy with the verbal complementation system. In the POPC and EC the *to*-infinitive competes with different types of expression, namely purposive *to*-PPs and subjunctive *that*-clauses (or NPs) respectively. As these constructions thus do not share competing expressions, we cannot explain the spread of the *to*-infinitive to the EC by analogy within the adjectival complementation system (see Figure 13 in section 5.2.2). Moreover, I have shown elsewhere that language contact can be ruled out as an explanatory factor and that the tense of the matrix cannot be invoked either: the data refute the hypotheses that the influx of Romance adjectives in Middle English (see section 3.1) influenced the general increase of the *to*-infinitive, and that the decline of the subjunctive in past contexts in the same period (see section 5.2.1) may have promoted the use of the *to*-infinitive in past contexts (Van Linden 2010a: 32–36). All of this confirms the conclusion that the *to*-infinitive came to function as a Theme-argument with adjectival matrices through analogy with the much more frequent verbal matrices, for which a clear development from Goal-argument to Theme-argument has been established by Los (2005). Both types of matrices are already attested with *to*-infinitives functioning as Theme-argument in Old English, and are the locus of large-scale replacement from Early Middle English onwards. The finding that the adjectival constructions manifest a less abrupt replacement than the verbal ones serves as corroborating evidence for the hypothesis that the latter constructions served as the models of analogical extension. In keeping with Fischer (2010a: 193), I see analogy as both the mechanism and the cause of the described distributional shift.

The data also indicate that the influence of the verbal matrices can be viewed as functioning both paradigmatically and syntagmatically (cf. De Smet 2008: 102–127). On the one hand, we can view the rise of the *to*-infinitive as an instance of paradigmatic analogy (De Smet 2008: 119–120), i.e. “the extension of a construction from one environment to another on the basis of a link between the spreading construction and some other paradigm-

matically related construction” (De Smet 2008: 118). In this case, the *to*-infinitive spread from the intention and manipulative verb constructions (the source syntagm[s]) to the adjectival mandative construction (the target syntagm) with the subjunctive *that*-clause as the paradigmatically related construction. On the other hand, we can argue that the *to*-infinitive is seen to “extend its range of application on the basis of semantic similarity between the source environment [or source syntagm, AVL] and the target environment of extension [or target syntagm, AVL]” (De Smet 2008: 103), in this case the semantic similarity between intention and manipulative verb constructions and the adjectival mandative construction. The similarity between these two constructions lies in their mandative meaning: their semantics includes an element of will emanating from a human source. In the case of intention verbs and manipulative verbs, this human source appears as a referential agent participant, i.e. the matrix subject.⁷² In the case of the adjectival constructions, the attitudinal source is typically left implicit, but retrievable from the context, for instance as the (reported) speaker. The rise of the *to*-infinitive in the adjectival mandative construction can thus in my view be explained by both paradigmatic and syntagmatic analogy with verbal matrices, as visualized in Figure 14 (in which analogy is symbolized by ~) (cf. Van linden 2010a: 37–38).⁷³

The adjectival data from later periods than Middle English reveal that after the major reversal of distribution in the Middle English period, the *to*-infinitive did not continue to increase in frequency so as to oust the *that*-clause completely. If we compare the Early Modern English data to the Late Middle English data in Table 31 above, we can note only small differences (*that*-clauses: LME 36.71%, EModE 33.99%; *to*-clauses: LME 63.29%, EModE 66.01%; Fisher’s exact $p=0.6909$). In Late Modern English, the share of the *to*-infinitive peaked at 80% (a significant increase from EModE with Fisher’s exact $p=3.068E-07$). However, in Present-day English, it has decreased to about 72% (a significant fall with Fisher’s exact $p=1.699E-10$). So, after its rise in Middle English the *to*-infinitive stabilized at roughly a 3:1 ratio to the *that*-clause, with only a small peak

72 This is invariably the case with intention verb constructions, cf. (51)–(52) above. With manipulative verb constructions, it is only in active clauses that the matrix subject is co-referential with the source of will. In passive clauses, as in (53)–(54) above, by contrast, the identity of the source has to be inferred from the context.

73 Both types of analogy can also be invoked to explain the rise of the *to*-infinitive within the system of verbal complementation, as discussed in De Smet (2008: 119–120).

movement in Late Modern English. The Modern data thus present us with a new type of distribution, which calls for a different explanation (cf. Van linden 2010a: 38–45).

Whereas with verbal matrices mandative *to*-clauses kept gaining in frequency at the cost of the *that*-clause up to 1800 (Rohdenburg 1995), the adjectival data show no comparable continuous loss in frequency of the *that*-clause. This finding suggests that the Modern English distribution may

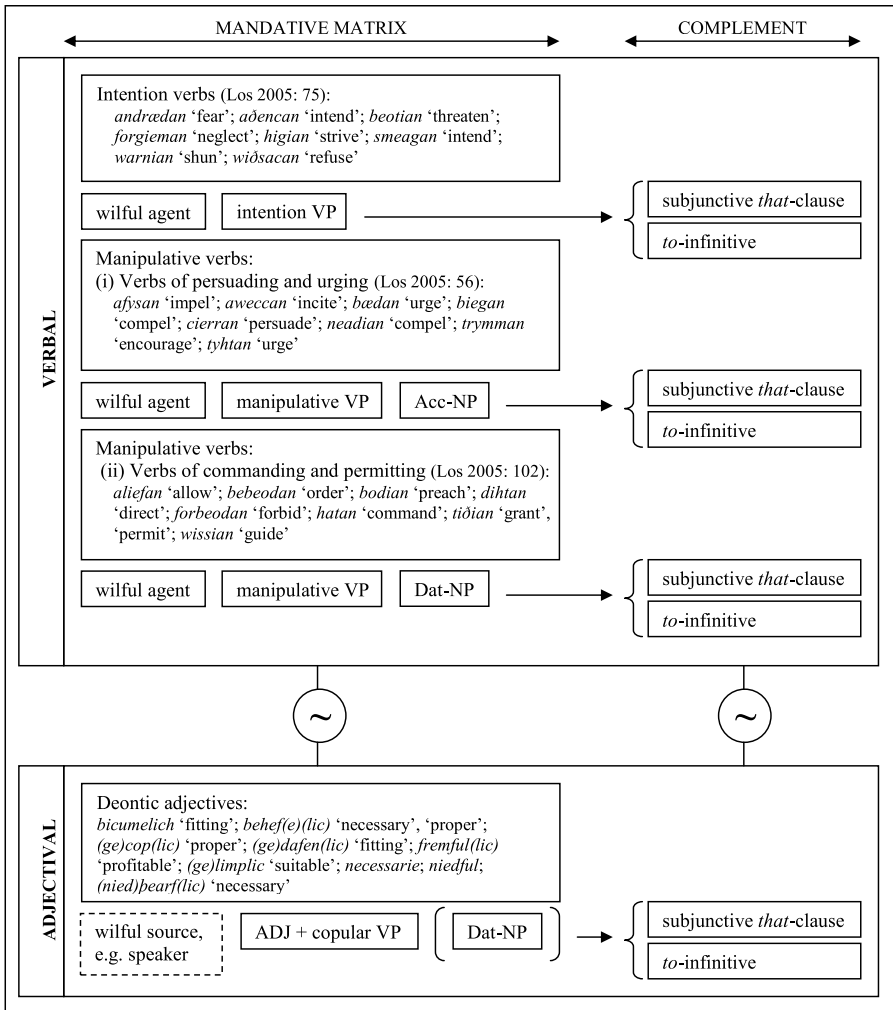


Figure 14. Syntagmatic and paradigmatic analogy between verbal and adjectival mandative constructions in Middle English

be determined by other factors than those that brought about the rise of the *to*-infinitive. In the literature on variation in clausal complements of verbal matrices, explanations have been formulated which relate to semantic integration and discourse factors. A critical investigation of the iconic principle of semantic clause integration (Givón 1980, 1990: ch. 13, 2001) reveals that it cannot explain the attested variation: strong adjectival matrices do not overall show higher shares of mandative *to*-clauses than weak matrices, although they involve a stronger element of will than their weak counterparts. Instead, the variation between *that*- and *to*-clauses with strong adjectives such as *essential*, *vital*, and *necessary* suggests that their clausal distribution may be lexically determined to a large extent, understood here as applying to the adjectives individually (for more details, see Van linden 2010a: 39–41).

A second type of explanation for distributional patterns of complements relates to discourse factors, such as information structure. *To*-infinitives are typically taken to “rely on previous discourse to complete their function” (Borkin 1984: 60–61), while *that*-clauses do not (cf. Kuno 1972; Noël 2003). Even though these findings should not simply be extrapolated to the adjectival ECs because of difference in control relations (see Van linden 2010a: 41), there are indications that information structure does play a role in the distribution of mandative *that*- and *to*-clauses. A closer look at the informational salience of the subjects of mandative *that*-clauses in the Old and Late Modern English data shows that LModE has twice as many prominent or heavy subjects as Old English, as shown in Table 34 (53.3% versus 24.3%, a highly significant increase with Fisher’s exact $p=9.504E-08$). This finding may (at least partly) explain why the mandative *that*-clause has resisted total replacement by the *to*-clause. Whereas the latter “does not easily accommodate a large amount of information” (Noël 2003: 370), the *that*-clause is well suited to holding heavy or complex subjects. This observation is nicely captured by Rohdenburg’s (1995, 1996) Complexity principle, which states that “the more complex the dependent clause turns out to be, the greater is the need to make its sentential status more explicit” (1995: 368). An example of a *that*-clause with a ‘complex’ subject is given below.

- (55) It is obvious that, for such narratives to possess any real force and validity, it is **essential** that their character and authorship should be placed beyond all doubt. (CLMETEV 1889 Cassels, *A reply to dr. Lightfoot’s essay*)

Table 34 also shows which type of *that*-clause was ousted by *to*-infinitival clauses, i.e. the one with the indefinite pronoun *man* as subject (cf. [49]–

[50] above; see also Los [2005: 290–293] on verbal matrices). Since *man* has generic or arbitrary reference, these *that*-clauses can be replaced by non-controlled *to*-clauses, as in (50), without a loss of information, at least as regards the subject. Table 34 confirms that *that*-clauses with *man* have disappeared by Late Modern English (an explanation of why the more recent form *one* did not take over from *man* is proposed in Los 2005: ch. 10).

Table 34. The informational salience of subjects of mandative *that*-clauses in Old and Late Modern English

Informational salience	OE		LModE	
	750–1150		1710–1920	
	n	%	n	%
generic <i>man</i>	18	16.82	0	0.00
generic: other expression	4	3.74	3	0.79
personal pronoun + co-referential Experiencer in matrix clause	35	32.71	5	1.32
personal pronoun	24	22.43	169	44.59
Total informationally low subjects	81	75.70	177	46.70
personal pronoun + apposition/vocative	1	0.93	1	0.26
pronoun + contrast	0	0.00	3	0.79
nominal NP	15	14.02	167	44.06
nominal or pronominal NP + clause (relative or adverbial clause)	10	9.35	27	7.12
dummy subjects + actual subjects	0	0.00	4	1.06
Total informationally salient subjects	26	24.30	202	53.30
Total subjects	107	100.00	379	100.00

However, the data show that the rise of the *to*-infinitive was not restricted to non-controlled *to*-clauses taking over *that*-clauses with the indefinite pronoun *man*. Corpus examples confirm that the *to*-infinitive in the mandative extraposition construction can also have a controlled interpretation (in the sense of De Smet 2007: 91; cf. Kortmann 1991, 1995; Duffley 2000), and hence, that it was able to replace also non-generic *that*-clauses (see Van linden 2010a: 42–43). Nevertheless, LModE *that*-clauses still include a considerable share of complements with informationally low subjects (46.70%). This suggests that in addition to informational salience, yet other factors may motivate the variation between *that*- and *to*-clauses. For instance, *that*-clauses may be preferred as they enable the speaker to specify the type of modal relation between the mandative clause and the matrix event by means of modal auxiliaries. In other contexts, speakers may opt for *that*-clauses for stylistic reasons, for example to avoid the use of a split infinitive or the immediate succession of *to*-infinitives, cf. the *horror aequi*

principle (Rudanko 1998; Rohdenburg 2003; Vosberg 2003), i.e. “the widespread (and presumably universal) tendency to avoid the use of formally (near-)identical and (near-)adjacent grammatical elements or structures” (Rohdenburg 2003: 236) (for examples, see Van linden 2010a: 43–44).

By way of conclusion, I present the changing distribution of *that*- and *to*-clauses with adjectival matrices in Figures 15 and 16. The graphs only include data on the mandative clauses, as these offer the clearest diachronic picture. Figure 15 is based on the normalized frequencies given in Table 32, and distinguishes between weak and strong adjectives; Figure 16 is based on the relative shares of the *that*- and *to*-clauses given in Table 31, and covers the whole dataset. It is clear from Figure 15 that the frequencies of the *that*-clauses (in dashed lines) show a general downward movement, whereas the innovative *to*-infinitives (in solid lines) show a steep climb in the ME period (here, the weak adjectives precede the strong ones). This allowed us to conclude that the complementation of adjectival matrices showed a similar development as was observed for verbal matrices by Los (2005: 185–189). The EModE data show peaks for all lines in the graph, which has to be attributed to the high number of the clausal complements in the data. In terms of relative frequencies of the formal types, the EModE data fit in with a smooth line of development between the LME and LModE data, as can be seen in Figure 16. Figure 16 shows unmistakably that the major shift in distribution takes place in the EME period (cf. Los

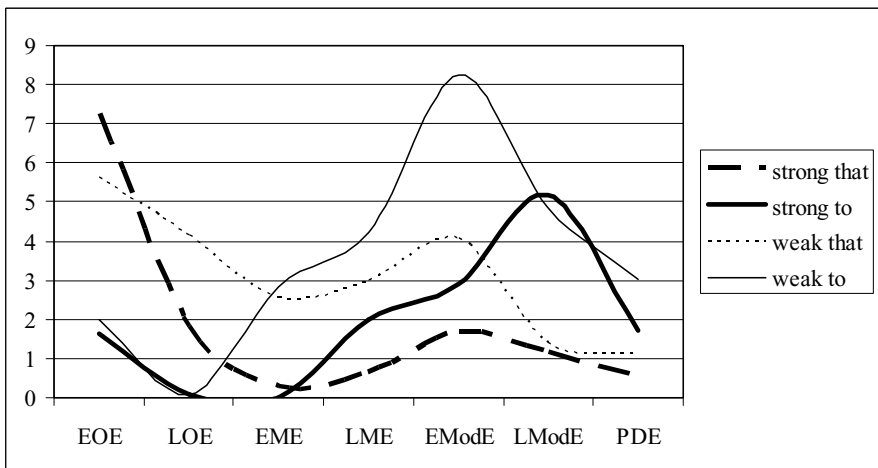


Figure 15. The development of the distribution of mandative *that*- and *to*-clauses with strong and weak adjectives (normalized frequencies)

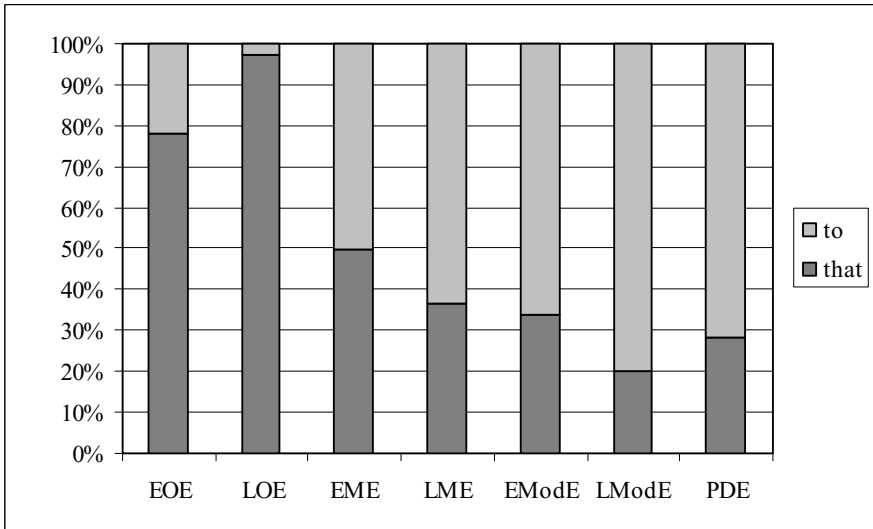


Figure 16. The development of the distribution of mandative *that*- and *to*-clauses (relative shares)

2005: 185–189). However, the *that*-clause remains available as an expression type of mandative complements, which may even be the preferred option for certain adjectives, such as *vital* and *crucial* (Van linden 2010a: 39–40). The rise of the *to*-infinitive in adjectival constructions has been accounted for by analogy with the changes that Los (2005) noted in the verbal complementation system. Crucially, her account of the changing distribution of the *to*-infinitive for intention verbs and manipulative verbs could not be readily applied to the adjectival constructions studied. In the case of the verbal matrices, the *to*-infinitive extended from the purposive environment to the Theme-complement environment (see section 5.2.2), on the basis of the semantic similarity between these two syntagms (syntagmatic analogy, cf. De Smet 2008: 103) and the presence of a paradigmatically related construction, i.e. the subjunctive *that*-clause (paradigmatic analogy, cf. De Smet 2008: 118). Within the system of adjectival complementation, however, no similar development could be established, since the purposive POPC and the Theme-complement EC never shared competing expressions. I have therefore argued that the mechanism of analogical extension was at work between the complementation of adjectival and verbal matrices in the period from Old to Middle English: mandative constructions with adjectives started favouring the *to*-infinitive by analogy with the rise of the

to-infinitive in mandative constructions with intention and manipulative verbs.

For the Modern data, I indicated that different types of explanations are required, as – unlike with verbal matrices (cf. Rohdenburg 1995) – the *that*-clause did not decline any further. Although the variation in clausal complements of adjectives seemed to be lexically determined to a certain extent, discourse-functional factors proposed in the literature on verbal complementation were shown to play some role as well. In general, *to*-clauses are selected when there is no need to express the agent overtly (however, this may be different for *for...to*-infinitive constructions, in which the subject of the *to*-infinitive can be easily coded by the *for*-PP preceding the *to*-clause). Either the speaker has no specific agent in mind (arbitrary reference; non-controlled interpretation of the *to*-clause), or the context enables us to infer the identity of the agent (controlled interpretation of the *to*-clause). *That*-clauses, by contrast, structurally allow for an overt subject, and in this sense they are most suited to accommodating informationally salient subjects. They also enable the speaker to specify the modal relation between the finite verb of the SoA in the complement and the matrix. Stylistic motivations such as the *horror aequi* principle are another factor bearing on the choice of clausal complement. Future research will have to include a more detailed investigation of discourse factors such as information structure and referential continuity. Van Linden and Davidse (forthcoming), for instance, show that the informational accessibility of subject referents in *that*- and *to*-clauses provides an interesting perspective to account for the clausal variation. In addition, it may be useful to take a closer look at tactic relations (cf. Noël 2003). These studies may well provide us with a better understanding of the principles governing the current distribution of the formal types of mandative complements with the adjectives studied here.

5.3. Conclusion

This second component chapter of the diachronic analysis of the adjectival constructions central to this book has focused on the development of the clausal complement patterns. It has concentrated on the syntactic relation between the matrix and the complement, and on the origin, development and distribution of two major formal types of complement, i.e. *that*-clauses and *to*-clauses. Especially in the discussion of the complements, the data demonstrated the diachronic applicability of the conceptual map. In addition, they revealed changes that can be related to changes described for verbal matrices.

The first part sketched the development of copular and transitive extraposition constructions (ECs). The diachrony of the copular subtype, it appeared, is a matter of dispute. Although many scholars agree that it originated as a subjectless construction, they disagree on the type of relationship that holds between the matrix and the clausal complement. However, I argued – against a subjectless construction account entirely – that the presence of correlative *that*-structures and the invariable post-verbal position of the complement in Old English clearly point to an extraposed subject clause analysis from Old English onwards. Due to changes in word order in Middle English, dummy *it* became an obligatory element in the construction. The rise of dummy *it* also influenced the development of transitive extraposition constructions. The active transitive construction is already found in Old English, but it gained in frequency only in the Early Modern English period (up to 33.66%), the period by which the absence of *it* had become exceptional. This is also the period in which the passive transitive construction appeared, which has remained infrequent up to Present-day English. Importantly, the types of matrix constructions were also related to the categories in the conceptual map. It was argued that the copular construction, for instance, can be used in dynamic, deontic and non-modal evaluative expressions, whereas the passive transitive EC (which is found with cognition verbs only) is restricted to the attitudinal categories. In such cases, both the copular and the passive transitive EC involve covert attribution of stance. The active transitive EC with cognition verbs is restricted to the attitudinal categories as well, but it typically involves overt attribution of stance. Active transitive ECs with causative verbs and strong adjectives, in turn, typically express situational dynamic meaning. In this sense, the types of matrix constructions that are central to this study can be linked with the categories in the conceptual map.

The second part, which focused on the formal types of clausal complements, set out to check whether the conceptual and lexico-semantic distinctions of the conceptual map hold across the various historical stages. This turned out to be the case. From Old English onwards, strong adjectives are found with mandative complements only, whereas weak adjectives are construed with both mandative and propositional clauses. The data on the *that*-clause revealed that in Middle English the two semantic types became formally distinguishable in terms of mood type, as the subjunctive became restricted to mandative clauses. More generally, the diachronic data showed that the semantic distinction between mandative and propositional complements cross-cuts the formal distinction between *that*- and (*for...*)*to*-clauses in all periods. However, it was also found that the two semantic types differ in the diachronic distribution of the two formal types. With the

mandative complements, the innovative *to*-infinitive encroached upon the *that*-clause most massively in the Middle English period, and it remained the most frequent formal type from LME onwards. The propositional complements, by contrast, were too few up to Early Modern English to draw firm conclusions for the earlier periods, but in Late Modern English and Present-day English they tend to retain the *that*-clause more often than the mandative complements. All in all, we can conclude that the findings on the clausal complement patterns support the diachronic applicability of the conceptual map, and help to fill the gap in the literature on adjectival complementation.

Furthermore, the adjectival data presented in this chapter provided further evidence for a number of changes observed with verbal matrices. The development of the finite form in mandative complements of adjectival predicates, for instance, showed many similarities with that of verbal matrices, in that in both types the subjunctive forms lost frequency over time in favour of periphrastic, indicative or ambiguous forms. The adjectival data on the *to*-infinitive confirmed the changing distribution of the *to*-infinitive described by Los (2005) within a broader view of the complementation system in English. According to Los (2005), the *to*-infinitive, deriving from a *to*-PP, originally functioned as a purposive adjunct to VPs, and came to be used as a Theme-argument in Old English, in which it became functionally equivalent to the subjunctive *that*-clause. My finding that in Old English the *to*-infinitive was more frequent in purposive contexts (i.e., in the POPC) than in later periods bore witness to its *to*-PP origin. Likewise, the attestation of the *to*-infinitive in Old English ECs with adjectives, in which it functioned as a Theme-argument, verified that its distribution exceeded that of the purposive *to*-PP in prehistoric times. Furthermore, the data on the diachronic distribution of *that*- and *to*-clauses corroborated Los's (2005) claim that the *to*-infinitive gained in frequency at the expense of the mandative *that*-clause (rather than replacing the bare infinitive). After intention verbs and manipulative verbs, the *to*-infinitive started to replace the *that*-clause more abruptly and extremely than was found with adjectival mandative constructions. I argued that the adjectival constructions started favouring the *to*-infinitive in Early Middle English by – syntagmatic and paradigmatic – analogy with the increasing frequency of the *to*-infinitive with mandative verbal matrices. The account of the Modern English distribution of mandative *that*- and *to*-clauses, finally, substantiated the explanatory value of proposals that invoke discourse factors such as information structure, or stylistic preferences to account for clausal variation. On the whole, this chapter has thus contributed to a more thorough understanding of the

diachrony of the complementation system in English – and maybe across languages as well.

With regard to the next chapters, this chapter also serves as descriptive background. Its discussion of the relation between matrix and complement and those of the clausal complement patterns has elucidated the diachrony of the constructions that will be dealt with in chapters 6 and 8. Chapter 6 will present the final part of the diachronic analysis of the adjectival constructions. Its main goal is to describe the development of propositional complements from mandative ones, based on two sets of adjectives, namely adjectives of importance and adjectives of appropriateness. In this case-study, I will enrich the analysis into the two discrete semantic types, adopted in the present chapter, by investigating bridging contexts. I will show that these play an important role in the development of propositional complements, at least with one set of adjectives.

Chapter 6

The diachrony of the complex constructions: The development of propositional complements

Whereas chapter 4 discussed the development of the adjectival matrix and chapter 5 the diachrony of the clausal complement patterns, the present one investigates the constructional wholes of matrix and complement across time. It offers a diachronic explanation for the synchronic situation presented in chapter 8, i.e. the structural possibilities of construction types and their frequency. Like chapter 4, it bears out the validity of the conceptual map for diachronic analysis in terms of ordering of its categories: it will show that deontic constructions are diachronically prior to non-modal evaluative constructions. That is, it will become clear that constructions with propositional complements developed out of constructions with mandative complements.

Although its main aim is diachronic in nature, this chapter starts from the synchronic distribution of the types of adjectival extraposition constructions (ECs) and it offers a functional description of them. This description builds on the conceptual description of the ECs presented in chapter 2 and on the general syntactic description presented in chapter 5. In addition, I will relate this synchronic picture with insights from the typological literature on complementation. More importantly, this chapter also investigates the diachronic developments by which the present system was fashioned. Thus, it focuses on the development of non-modal evaluative constructions in a set of weak and strong adjectives. Here it will be shown that the adjectives first occur in deontic expressions with mandative complements before they are found in non-modal evaluative constructions with propositional complements. In fact, two strong adjectives, namely *essential* and *crucial* (cf. sections 4.2 and 4.5), are also marginally adopted in the propositional pattern in Present-day English. To account for these developments, I will propose two distinct pathways of change towards the propositional pattern in terms of the two semantic classes of adjectives studied, i.e. importance and appropriateness adjectives (cf. Van linden and Davidse 2009). These pathways mark an upward movement in the conceptual plane of the map (from deontic to non-modal evaluative), just like the pathways described for the strong adjectival matrices in chapter 4 (from dynamic to deontic). Together with chapter 4, therefore, the present chapter reveals the diachronic relations between the modal-evaluative categories expressed by the

adjectival constructions, thus defining the vertical axis of the conceptual map as a pathway of change.

6.1. The construction types and data

The most important distinction in the interaction between matrix and complement of the complex adjectival constructions concentrated on in this chapter is that between deontic and non-modal evaluative expressions, which are illustrated in (1) and (2) respectively.

- (1) I thought it **important** to make Michelle feel at home while she was staying with my family. That is why I asked her to call me Uncle Gustavo. (CB, ukbooks)
- (2) Lastly, I believe it is **important** that the NEC is now dominated by members of the Shadow Cabinet. (CB, ukephem)

Throughout the previous chapters, complements of deontic constructions like the *to*-clause in (1) have been termed ‘mandative’ (Huddleston and Pullum 2002: 995), as they assess the desirability of a potential or tenseless SoA. Complements of non-modal evaluative constructions like the *that*-clause in (2) have been termed ‘propositional’, as they refer to a tensed SoA which is presupposed to be true (see section 2.2.2). This last semantic type of complement is generally associated with weak adjectives in the conceptual map, but in Present-day English, two strong adjectives seem to adopt the propositional pattern as well, i.e. *essential* and *crucial* (see sections 4.2 and 4.5). In addition, the Present-day English data present us with another interesting construction that contains a propositional complement, which is illustrated in (3). This example involves a combined pattern of complementation (cf. section 5.2.2), in which the (secondary) propositional complement functions as object clause of the primary mandative complement, *to realize*.

- (3) If you decide to treat yourself without consulting a practitioner it is **important** to realize that the reason the treatment may fail is because the incorrect preparation has been chosen, and not because homoeopathy is unsuitable for your problem. (CB, ukbooks)

Pragmatically, this example bears a close resemblance to example (2) which has a primary propositional complement. In both, the hearer is urged to give his or her attention to the proposition put forward by the speaker.

This pragmatic link between mandative-propositional complementation and propositional complementation suggests a diachronic link between the two, which will be confirmed by the data.

As this case-study seeks to investigate the development of non-modal evaluative constructions with propositional complements, the adjectives that qualify should appear with mandative and propositional types of complements at different periods of time. This brings us back to the tripartite division of the data on the basis of their relative diachronic availability in the English lexicon, as discussed in section 3.1. Like in the studies presented in chapter 4, the adjectives that lend themselves best to the present investigation are those of group C, which came into the English language only in Middle English or later. Again, adjectives of group A, which mainly occur in Old English (and sometimes marginally in EME as well), do not qualify, as they offer only a synchronic window on the Old English period. In addition, the adjectives that do occur with propositional complements, such as *gedafenlic*, *gelimptic* and *rihtlic*, provide too few data to draw even tentative conclusions. Adjectives of group B, which are attested throughout the various historical stages, do not qualify either, as they pattern with both mandative and propositional complements from Old English already.⁷⁴ The adjectives of group C, by contrast, offer a diachronic window, as the data show a different period of appearance for mandative and propositional complements. For the strong adjectives *essential* and *crucial*, this has been shown in sections 4.2 and 4.5;⁷⁵ hence, they were selected for this case-study. Since their meaning in non-modal evaluative constructions can be paraphrased as ‘very important’, the weak adjective *important* was included too. Together, these three will be referred to as the ‘importance adjectives’. Besides *important*, three other weak adjectives were selected, i.e. *appropriate*, *proper* and *fitting*, which will be termed the ‘appropriateness adjectives’. Corpus searches for each of the six adjectives were carried out in the diachronic and synchronic corpora presented in section 3.2. As noted there, however, for the period 1640–1710 I did not use the last subpart of the *Penn-Helsinki Parsed Corpus of Early Modern English* (PPCEME), but the

74 Old English examples of *good* with propositional *that*- and *to*-clauses have been given in (29) and (42) respectively (see sections 5.2.1 and 5.2.2).

75 It should be noted that *crucial* is found with clausal complements only in Present-day English. It thus started to occur with mandative and propositional complements in the same period (at least according to the data investigated here). However, its synchronic distribution suggests that mandative complements predated propositional ones (see Table 37).

much larger *Corpus of Early Modern English texts* (CEMET), described in De Smet (2008: 14–16).

6.2. Towards a synchronic functional description

This section is concerned with the vertical axis of the conceptual map, and it builds on the distinction between dynamic, deontic and non-modal evaluative expressions (see sections 2.2.2 and 2.3). It presents a functional and distributional description of the synchronic complex constructions with *important*, *essential*, *crucial*, *appropriate*, *fitting* and *proper*. It provides arguments for distinguishing between mandative and propositional complements, and offers a functional account of their various formal subtypes. The quantitative instantiation of the complement types will give us an idea of what are at present marked and unmarked complementation options. As a basic distinction this description sets apart primary complements, which depend immediately on the adjectival matrix, from secondary complements, which are complements of clauses that are themselves complements of the adjectival matrix. In general, the synchronic data suggest a number of diachronic hypotheses, which will be investigated in the next sections.

6.2.1. The interaction between matrix and complement: Mandative versus propositional primary complements

Mandative and propositional complements typically imply a difference in the meaning of the construction as a whole and also of the adjectival matrix (see section 2.2.2).⁷⁶ The following two examples with *appropriate* exemplify these basic differences.

- (4) THE Queen yesterday formally ended the 200-year tradition of giving knighthoods to Australians. Prime Minister Paul Keating said she now agreed it was **appropriate** for Australians to be awarded only national honours. (CB, today)

⁷⁶ Exceptions are examples such as (3), with mandative + propositional complement, and (2), which has a propositional complement only but seems to imply a mandative one ('it's important to realise that'). The issue of the meaning of the matrix and the whole construction in examples like these will be discussed from a diachronic perspective in section 6.4.

The structure in (4) has a mandative *to*-clause that describes an action that is desired but yet unrealized at the moment of attitudinal assessment (*it was*). The whole construction expresses the reported speaker's (i.e. the Queen's) assessment of the SoA denoted by the (*for NP*) *to*-clause as (morally) desirable: at a specific moment in the past, she thought it was desirable Australians should be awarded only national honours. Thus, the construction has deontic meaning as defined in section 2.2.3: a modal source assesses the desirability or (moral) acceptability/necessity for an agent (the Queen herself) to carry out a certain action (to stop giving knighthoods to Australians). The semantics of the construction also forces a deontic flavour onto the interpretation of the matrix adjective *appropriate*.

- (5) He was an excellent cook, especially renowned for his home-made ice-cream, and a dinner was never complete without Gandy producing his snuff box and passing it round. Gandy always organised the annual Guy Fawkes party for his college, and it was **appropriate** that on his retirement in 1986 Wolfson feted him with a dinner and a magnificent firework display. (CB, times)

By contrast, the structure in (5) has a propositional complement. The whole construction conveys the speaker's evaluation of a propositional content, which is presupposed to be true (as explained in section 2.2.2). In this example, the event referred to, i.e. the feting of Gandy on his retirement, has already occurred at the time of evaluation (*it was*). In (5), it is irrelevant whether the speaker wanted the SoA to happen or not; he or she can only assess the fact that it did happen. The adjectival matrix does not have a deontic flavour, but is merely (non-modal) evaluative. The evaluative meaning of the adjectives is close to their original qualitative sense. As illustrated by (5), and as we will further see in section 6.4, the meaning of adjectives such as *appropriate* and *important* in constructions with propositional complements often boils down to a general positive evaluation, evoking qualities such as 'good', 'natural', 'logical' or 'significant'. In short, the semantic difference between ECs with mandative complements and ECs with propositional complements can be summarized as follows: in the first type a modal source assesses the deontic desirability of an agent carrying out an action, while in the second type, the speaker, or a third party, evaluates an SoA presupposed to be true (see Van Linden and Davidse [2009: 172–179] for more examples).

The main argument for distinguishing between mandative and propositional complements relates to the difference in their factuality status (see section 2.2.2). The SoAs in mandative complements are inherently poten-

tial, and hence unrealized, as in (4). The SoAs in propositional complements, by contrast, may have been realized, as in (5) above, or not yet, as in (6) below. What is crucial here is that the question of the likelihood or truth-value of the SoA is relevant (see section 2.2.2). In cases where the SoA has already taken place, as in (5), the proposition is presupposed to be true, i.e. in Kiparsky and Kiparsky's (1971) terms it is factive. In cases where the SoA has not happened yet, as in (6) below, or is assessed on its likelihood, like in the secondary complement in (3), it is not factive, but it is framed with regard to its possibility of being or becoming true.

- (6) Born in Glasgow to an Irish family with strong musical influences, Gaughan has established himself as an icon for a generation of politically aware artists. ... While the power of Gaughan's message may make some uncomfortable, the power of his voice and musicianship cannot fail to inspire. It is **appropriate** that Gaughan, who for so long has been a major figure on the Scottish folk scene, should play on the first night of a festival destined to promote folk culture for years to come. (CB, ukephem)

In (6) the speaker takes for granted the fact that Gaughan will play on the first night of the first edition of the Celtic Connections Festival in January 1994, and he or she evaluates this situation as appropriate. In other words, propositional complements are deictically grounded either in terms of time or epistemic modality.

The difference in factuality status is given further support from observations from the typological literature, in which it is related to different types of complement relation. These relations derive their semantic properties from the matrices or complement-taking predicates (henceforth CTPs), expressing the main SoA (Ramson 1986: ch. 5; Givón 1990: 516–517; Cristofaro 2003: 99). In terms of Noonan's (1985; 2007: 120–145) semantic classification of CTPs, adjectival matrices like *be proper* in (4) belong to the type of desiderative predicates like *want* (2007: 132–137), or modal predicates like *ought*, *should* or *must* (2007: 137–139). Matrices like *be proper* in (5), by contrast, belong to the type of commentative predicates (Noonan 2007: 127–128), which “provide a comment on the complement proposition which takes the form of an emotional reaction or evaluation (*regret*, *be sorry*, *be sad*) or a judgement (*be odd*, *be significant*, *be important*).” Noonan has found a cross-linguistic preference for coding these predicates as adjectives, when the language in question distinguishes between adjectives and verbs (Noonan 2007: 129). Matrices of dynamic constructions, such as

be essential in (7), belong to the modal predicates, much like those of deontic constructions, if they are not interpreted as desiderative CTPs.

- (7) The size of collector ... depends both on its efficiency and on a household's hot water needs. ... Quite high temperatures can be reached on sunny days but much of the time top-up heating, by a conventional system, is needed to achieve the normal domestic hot water temperature. It is **essential** to maintain a tank temperature of at least 60C even in the summer. (CB, ukephem)

The plausible membership in the same semantic type of CTP may explain why dynamic and deontic constructions are often hard to distinguish. The data show there are no formal criteria to tell them apart (cf. section 5.2). Rather, the main difference between the two types of modal constructions found with the strong adjectives is the type of motivations on which the expression of necessity is based (internal or external to the SoA) and the involvement of an attitudinal source (cf. section 1.2.1). However, the shared relation of necessity makes these two conceptual types share the same CTP category. This is why also in this chapter mandative complements include the clausal complements of both dynamic and deontic constructions.

The semantic properties of the different types of complement relation can be described in terms of general parameters (cf. Givón 1980, 1990: ch. 13; Noonan 1985, 2007; Palmer 1986: ch. 4; Ransom 1986; Dik 1989, 1997ab; Hengeveld 1989, 1990; Siewierska 1991), such as the level of clause structure at which the complement relation is established, semantic dependency, and semantic integration (Cristofaro 2003: 99–100). These three parameters will be discussed below, insofar as they apply to modal, desiderative and commentative predicates.

The level of clause structure at which the complement relation is established differs for modal and desiderative predicates on the one hand, and commentative predicates on the other. This parameter assumes a functional analysis of the clause (as proposed in Dik 1989, 1997a, 1997b; Hengeveld 1989, 1990; Siewierska 1991), more precisely as consisting of four levels or layers.⁷⁷ Commentative predicates, expressing non-modal evaluation,

77 The model as proposed within Functional Grammar is conveniently summarized in Cristofaro (2003):

[E]ach clause can be described as a structure consisting of four hierarchically ordered layers, or levels, such that each higher layer fully encompasses the lower ones. Each layer designates a different entity type and displays different

pertain to the propositional level. Such a complement relation “does not involve two distinct SoAs directly, but rather an SoA [i.e. the fact that an attitudinal source expresses his or her stance, AVL] and a propositional content referring to another SoA [i.e. the object of attitudinal assessment, AVL]” (Cristofaro 2003: 110–111). This is also why in section 2.2.2 (Table 3) non-modal evaluative expressions are argued to apply to the SoA as a whole. Modal and desiderative predicates, by contrast, pertain to the predication level. In Cristofaro’s (2003: 111) view, these predicates relate “the occurrence of the SoA as a whole to a situation whereby this occurrence is necessary, possible, or desired”. She concludes that “insofar as they involve a relation between two distinct SoAs, they pertain to the predication, not the predicate level” (Cristofaro 2003: 111). This conclusion is also in keeping with the discussion in sections 1.2.1 and 2.2.2, in which dynamic and deontic expressions are said to be tied to a participant, rather than applying to the SoA as a whole (except when the first type does not imply a participant). In any case, the first parameter indicates that mandative and propositional complements differ in that the relation with their matrices is established at a different level of clause structure.

The parameter of semantic dependency, which is related to the first one, also points to a difference between mandative and propositional complements, specifically in terms of time-reference and discourse dependency.⁷⁸

functional properties. The most basic layer includes predicates and terms. Predicates designate properties or relations, while terms are used to refer to entities. Terms can be placed in space and time, and evaluated in terms of their reality. The second layer is that of the predication. A predication is the result of the application of a predicate to the appropriate terms, and designates SoAs (Dik 1989: 46). An SoA is the conception of something that can be the case in some world, and can be evaluated in terms of its existence. It can be said to occur, take place or obtain; it can be located in space and time. ... The third layer is that of the proposition, and pertains to what is said or thought about SoAs. A proposition designates a propositional content, which is something that can be evaluated in terms of its truth. A propositional content can be said to be known or thought about; it can be a reason for surprise or doubt; it can be mentioned, denied, rejected, and remembered. The fourth and uppermost layer is that of the clause (or utterance) considered from a global point of view. It encompasses the speech situation as a whole, and specifically refers to the speech act, which can be evaluated in terms of its felicity. (Cristofaro 2003: 109–110)

78 Noonan (2007) also distinguishes a third subtype of semantic dependency, namely truth-value dependency. A complement is truth-value dependent if “the complement construction containing it involves an explicit qualification of

A complement is time-reference dependent “if its time reference is a necessary consequence of the meaning of the CTP”, i.e. is “logically bound by the time reference of the CTP” (Noonan 2007: 102). CTPs whose complements are time-reference dependent include desiderative and modal predicates. In the case of deontic expressions, the element determining the logical relation between predicate and complement is the desire of the modal source that the SoA in the complement be realized. This desired actualization is typically future-oriented (Noonan 2007: 102). Even in mandative complements with present continuous or perfect forms, as in *it’s important to be thinking about me* and *it is essential to have it planned*, the SoAs are virtual (cf. Bolinger 1967b: 348–351).⁷⁹ As explicitly noted by Noonan (2007: 104) “complements with DTR [dependent time reference, AVL] do not have to represent future events, but may simply represent potential events or states” (cf. Bolinger 1967b: 356–359; Palmer 2001: 8; Verstraete 2007: 42–46), which is reflected by their typological tendency to be coded by non tense-marked verbal forms such as the infinitive and subjunctive (see section 6.2.2). The same goes for situational dynamic expressions, in which the relation of necessity also entails time-reference dependency. In my view, it is the intrinsically potential nature of mandates which determines their dependence on the modal or desiderative matrix.⁸⁰ By contrast, there is no time reference dependency between propositional complements and their commentative matrices. Propositional complements have their own “independent time reference” (Noonan 2007: 102), i.e. they can refer to past, present or future events independently of the temporal location of the matrix. Not unsurprisingly, therefore, the difference between mandative and propositional complements in terms of time-reference dependency cor-

commitment to the truth of the proposition embodied in the complement” (Noonan 2007: 102). As this type of dependency is found only with predicates expressing positive or negative propositional attitude, such as *believe*, *be possible*, *doubt*, *deny*, it does not apply to the data studied here.

79 In particular, Bolinger (1967b) gives examples of imperatives with perfective forms, such as *Please, Neale, don’t have read it yet!* In such examples, however, the SoA denoted by the perfective form is anterior to another potential SoA (e.g., *by the time I have arrived*).

80 Cristofaro (2003: 112) formulates this point very radically: “Whether and when the dependent SoA takes place is completely irrelevant to the condition of desire expressed by the main predicate.” To me, this point seems to contradict her earlier comment that “predicates like ‘want’, however, exclude that the dependent SoA may have taken place in the past” (Cristofaro 2003: 103).

relates with the distinction between tenseless and tensed SoAs introduced in section 2.2.2.

Discourse dependency relates to whether or not the SoA in the complement “is part of the background or common ground of the participants in the discourse” (Noonan 2007: 102). Mandative complements, which describe an action or situation the speaker wants to see realized or an action which is necessary for SoA-internal reasons, are not part of the common ground. By contrast, propositional complements, which are typically presupposed to be true, do form part of the background to the discourse. Thus, the difference in factuality status between the two semantic types of complement correlates systematically with opposite values for two types of semantic dependency discussed by Noonan (2007). This parameter is related to the first one in that predications, at the level of which modal and desiderative relations are established, can still be located in space and time, whereas propositions, at the level of which commentative relations are established, are temporally anchored and typically presupposed to be true.

The parameter of ‘semantic integration’ has provoked some debate. Against Givón’s (1980, 1990: 526) view that semantic integration assumes “the spatio-temporal integration of two events into a single event frame,” Cristofaro (2003: 119) argues that “spatio-temporal contiguity and referential integration [i.e. the sharing of participants, AVL] are neither necessary nor sufficient conditions for semantic integration.” Rather, this third parameter relates to “whether and how much two SoAs are interconnected” (Cristofaro 2003: 119). This parameter is the only one which gives different values for the three types of CTP focused on. Modal predicates involve a high degree of semantic integration, as the modal condition “is only defined in terms of the SoAs to which it applies” (cf. Langacker 1991: 270), and it does not itself involve autonomous participants (Cristofaro 2003: 120). As the modal condition cannot be conceptualized without reference to the SoA to which it applies, it involves a high degree of interconnection between the linked SoAs, comparable to that between auxiliaries and their main predicates. Desiderative predicates, in turn, cannot be conceptualized separately from the SoA to which they apply either, but their dependent SoAs take place independently of the desire expressed by the main SoA, and they do involve autonomous participants. These last two properties reduce the degree of semantic integration (cf. Cristofaro 2003: 121). Commentative relations involve no semantic integration at all, as they do not involve a direct linking of two SoAs. As explained above, such relations involve an SoA and a propositional content, so that the main SoA is only indirectly linked with the dependent SoA referred to by the propositional content. Thus, the three types of CTP discussed here differ in terms of semantic integration, as

modal CTPs involve a high degree, desiderative CTPs a low degree, and commentative CTPs no semantic integration at all.

In conclusion, the typological literature on complementation provides some useful parameters and distinctions to get a better grip on the conceptual distinctions at work in the conceptual map. Table 35 below summarizes the discussion above. This table shows that commentative relations stand out as a category distinct from modal and desiderative relations across all parameters. These last types, by contrast, have very similar semantic properties. They only differ in terms of semantic integration. The discussion of the semantic characteristics of the various complement relations has thus substantiated the conceptual difference between the modal and non-modal categories in the conceptual map. In other words, insights from the domain of complementation have identified the parameter of factuality as the most salient one, setting apart non-modal evaluative meaning from deontic and dynamic meaning. For the distinction between attitudinal and situating categories, which is the most salient one from the perspective of the domain of modality (and evaluation) (see chapters 1 and 2), the study of complement relations could not adduce additional evidence. In fact, it is only insofar as predicates in deontic constructions can be regarded as desiderative predicates rather than modal ones that they differ from predicates in dynamic constructions in terms of semantic integration. As this difference is not coded by formal means,⁸¹ the counts of mandative complements with *essential* and *crucial* in the following sections include the clausal complements of both deontic and dynamic constructions.

Table 35. The semantic properties of modal, desiderative and commentative relations

Parameters → Types of CTP ↓	Level of clause structure	Semantic dependency		Semantic integration
		Time- reference	Discourse	
Modal	predication	dependent	independent	high degree
Desiderative	predication	dependent	independent	low degree
Commentative	proposition	independent	dependent	no integration

81 The only formal means that may be interpreted to distinguish between dynamic and deontic expressions are not obligatory and pertain to the matrix rather than the complement. More precisely, phrases like *I think (it's essential)* and *in my view*, or transitive ECs, such as *we thought it crucial*, imply an attribution of stance, which is characteristic of deontic meaning (cf. section 5.1.2; see also section 8.3.4 for further discussion).

6.2.2. The types of primary mandative and propositional complements

While the previous section discussed the interaction between matrix and complement, and substantiated the fundamental semantic distinction between mandative and propositional complements, the present section discusses the various possible codings they can receive. In keeping with the functional approach taken here, I will relate the basic semantic properties of mandative and propositional complements to their different formal realizations (for each type, different examples can be found in Van linden and Davidse [2009: 181–185]). At the same time, I will also present the relative frequencies of these formal types as attested in the data set. Table 36 details the overall absolute and relative frequencies of the semantic subtypes, cross-classified with their formal codings. The abbreviations used in this and all the following tables are: n: absolute frequency; N: relative frequency per 100,000 words; %: relative share.

Table 36. The overall distribution of propositional and mandative complements with the adjectives of importance and appropriateness in PDE

COBUILD		6 adjectives				
		n	N	%	% of semantic type	% form per semantic type
prop	<i>that</i>	106	0.25	5.48	5.79	94.64
	<i>to</i>	6	0.014	0.31		5.36
prop/ mand	<i>that</i>	17	0.040	0.88	1.14	77.27
	<i>to</i>	5	0.012	0.26		22.73
mand	<i>that</i>	586	1.39	30.28	93.07	32.54
	<i>to</i>	1,215	2.89	62.79		67.46
Total		1,935	4.60	100.00	100.00	-

Mandative complements convey potential SoAs, whose actualization is necessary because of SoA-internal reasons (dynamic constructions), or desired by the (reported) speaker or a third party, as in (8) below (deontic constructions). Table 36 shows that they are commonly coded by *to*-infinitives (67.46%), unlike propositions (5.36% of *to*-clauses).

- (8) The group joined Melissa Etherride ... to help raise money for a pro-choice political committee. Asked why they felt it was **important** to participate in the fundraiser, Spinal Tap replied ‘We heard women would be there.’ (CB, ukmag)

Bolinger (1967b: 351–352) has concentrated on the close analogy between an infinitive coding a mandative complement, and an imperative, which expresses mandatory status in the independent clause. Both expression types are non-finite, lack deictic tense marking, and typically have no subject expressed with them. The English imperative even has the form of the infinitive, and the mandative infinitive is functionally and formally the closest counterpart of the imperative (Bolinger 1967b: 362). It expresses the desired action as an intrinsically virtual SoA, whose realization is dependent on the willingness of the agents appealed to by the modal source (Davids 1999: 358). For dynamic constructions, it is the property of time-reference dependency rather than possible analogy with the imperative that explains the frequency of *to*-infinitives, which are not marked for tense, and hence do not establish temporal anchoring.

Table 36 also shows that 32.54% of the mandative complements are coded by finite clauses. These clauses may contain a subjunctive, a deontic modal, an indicative or a morphologically ambiguous form of the verb (see section 5.2.1). The first two coding forms, illustrated in (9) and (10), mark the potentiality and desirability or necessity of the situation.

- (9) The party's leader, Mr Neil Kinnock, said it was now **essential** that a general election be called. (CB, bbc)
- (10) It is most **important** that a child should be aware of constant, harmonious relationships between his parents. If you must quarrel with your partner, don't do it before your child; and make it up before he can sense the rift. (CB, ukbooks)

With an indicative finite form, like in (11), these elements have to be inferred on the basis of contextual clues. In (11), the Home Secretary Jack Straw expresses the (moral) desirability of preventing another scandal like the Bell case (after her conviction and prison term, child killer Mary Bell impudently received her blood money).

- (11) He [i.e. Jack Straw, AVL] said: "I am looking at it urgently. It is **important** that cases like this, which are a serious affront to the public, do not happen again." (CB, sunnow)

Huddleston and Pullum (2002: 995) state that such 'covert' mandative *that*-clauses with indicative as in (11) are fairly rare. However, this is refuted by the data. Out of the 433 mandative *that*-clauses found with *important* (cf. Table 37), for example, no fewer than 161 (37.18%) are in the indicative mood, and another 200 cases (46.19%) are ambiguous between indicative

and subjunctive mood. Unambiguous subjunctive finite forms are found in 9 instances (2.08%) only, and modal auxiliaries such as *should* are found in 63 examples (14.55%).

Propositional complements, by contrast, are in the overwhelming majority of cases coded by finite clauses (94.64%), and only marginally by *to*-infinitives (5.36%). Propositions involve, as Halliday (1994: 71) puts it, arguable claims, which can in principle be challenged, or, for which the question of likelihood is relevant (cf. Verstraete 2007: 147–148). The propositional complements found in the ECs I am concerned with function as nominals, and hence they are not asserted but *presented* as presupposed true or construed as “proposition[s] capable of being manipulated, evaluated, and commented on” (Langacker 1991: 35). The question of likelihood remains relevant, although it requires more rhetorical work for an actual challenge in that the propositional content has to be treated as an independent utterance. For this, it needs to have a reference point in the deictic centre shared by speaker and hearer (Halliday 1994: 75; Langacker 1991: 195). (Remember that these complements are time-reference independent, but discourse-dependent.) Finite tensed verb phrases or attitudinal *should* give the proposition such a reference point; i.e. they can be used to refer to tensed SoAs, like in (12) and (13) (see section 2.2.2).

- (12) Olsen said: “For me it is **important** he is coming here. ... I wanted him as my guest and what better opponents than England? When he said yes I was delighted.” (CB, today)
- (13) “It was **fitting** that skipper Eddie Gormley should score the winner against Kilkenny to clinch the title after all the service he has given this club over the years,” said Dolan. (CB, sunnow)

Moreover, the finite verb phrase is intrinsically related to the subject, in terms of which the truth of the proposition is asserted in independent clauses (Halliday 1994: 76–77), or presupposed in propositional complements. Thus, the propositional contents in (12) and (13) can be challenged by interrogatives replaying the subject and the finite verb in terms of which the claim in the original declarative was asserted: (12) *Is he really coming?* (13) *Did Gormley really score the winner against Kilkenny?*

Conversely, propositional complements are extremely rarely coded by *to*-infinitives in Modern English.⁸² Only a few instances were found in the

82 The reader may have noted that the frequencies in Table 36 differ considerably from those in Tables 27 and 28 in section 5.2.2. As will be seen in chapter 8, it is especially the weak adjective *good* that frequently combines with proposi-

Late Modern and Present-day English data, and only with the weak adjectives (see Tables 37 and 38 below). As just stated, propositions require the meanings expressed by the finite element of a tensed verb phrase or attitudinal *should*. A finite verb phrase gives the proposition a reference point in the communicative interaction and has an intrinsic relation to a subject. In order for an infinitive to code a proposition, it must somehow convey these elements by different means. In the data, such cases typically express the subject in a prepositional phrase in the matrix, like *of her* in (14), which refers to the agent of the *to*-infinitive (cf. Bolinger 1977: 147–149). The temporal anchoring of the proposition is established indirectly, i.e. by the temporal relation of the infinitive to the finite verb phrase in the matrix.

- (14) “Before business you must get well; this is the best wine.” She refused it feebly. He poured out a glass. She drank it. As she did so she became self-conscious. However important the business, it was not **proper** of her to have called on him, or to accept his hospitality. (CLMETEV 1905 Forster, *Where angels fear to tread*)

In (14), discussed earlier in the Introduction and repeated here, the perfect infinitive *have called* is anterior with regard to the past time of orientation expressed by *was* (Declerck 1991a: 118). Most of the infinitival propositional complements in the data have perfect infinitives, locating the SoA referred to before the time of orientation of the matrix. However, a few examples feature present infinitives as in (15), which raises the question of how the temporal anchoring of the proposition is established in these.

- (15) Behind the youth and maiden was a tempting alcove and seat Elfride sat down, and Stephen sat beside her. “I am afraid it is hardly **proper** of us to be here, either,” she said half inquiringly. “We have not known each other long enough for this kind of thing, have we!” (CLMETEV 1873 Hardy, *A pair of blue eyes*)

In (15), the locative adverb *here* indirectly indicates that the actualization of the situation referred to in the *to*-clause is simultaneous with the moment of speaking, since it deictically locates the proposition in the here-and-now of the speech event. Like in (14), the subject of the infinitive is expressed by an *of*-PP. There are also a few cases in which the subject of the *to*-clause takes the form of a *for*-PP, as in (16), which, in contrast to the *of*-PP in

tional *to*-infinitives in Present-day English. As *good* is not looked at in this case-study, its data are not included in Table 36.

(15), is structurally part of the complement clause (Huddleston and Pullum 2002: 1178).

- (16) [about the cosmological associations of the Northern Palace, AVL]
The Sun never reaches the North, so it is **proper** for the North to be associated with Winter; the ice, rain, and snow which are frequent in Winter makes Water the appropriate element. (CB, ukbooks)

The SoA referred to by the present infinitive in (16) is located as simultaneous with the time of speech in the sense that it expresses a permanent truth (Declerck 1991a: 90).

So far I have discussed the distinct coding tendencies of mandative versus propositional complements, but Table 36 also shows that in a small number of cases (1.14%) the contexts do not disambiguate the two possible readings of *to*- or *that*-clauses. I propose to label these cases as ‘bridging contexts’ (Evans and Wilkins 2000: 550), used here as a constructional notion.⁸³ Such examples as (17) contextually support both a mandative and a propositional reading.

- (17) THE FA announced yesterday it is to step up security at Wembley Stadium after Paul Ince was punched. Spokesman Steve Double said: “... Paul was simply stopping to sign autographs and in that particular area of the stadium there is a chance for the fans to mingle with the players. It’s right and **proper** that should happen. But what happened last night has cast a shadow over those arrangements.” (CB, sunnow)

From the context, we can infer that the players’ mingling with the fans has certainly happened. This supports a propositional reading of the *that*-

83 Evans and Wilkins (2000) have proposed the term ‘bridging context’ to describe a particular phase in semantic change from meaning A to B, specifically the phase in which “meaning B is only contextually implicated but not yet lexicalized as a distinct sense” (2000: 549–550). This phase precedes that of polysemy (see also Enfield 2003: 28–30). Evans and Wilkins (2000) apply their theory to the development of Australian perception verbs. In this book, I use the term ‘bridging contexts’ to describe constructions for which the context supports both a deontic and a non-modal evaluative reading. As the distinction between these two meanings cannot be dissociated from the complex constructions encoding them, I thus extend the application of the term from lexical phenomena to constructional ones.

complement, with *should* functioning as attitudinal *should*. However, the use of demonstrative *that* suggests that the speaker, Double, can also be understood to say that it is desirable in general that fans are allowed to mingle with players, in which case the *that*-complement and its finite form *should* are given a mandative reading. In any case, bridging contexts involve cases that can be interpreted as either deontic or non-modal evaluative constructions, but not as dynamic ones. In what follows, it will become clear that such contexts have diachronic relevance in that they may form a diachronic bridge between two distinct meanings.

While Table 36 generalizes over the six adjectives, I now turn to the quantitative instantiation of the types of primary complements with each adjective separately.

Table 37. The distribution of propositional and mandative complements with the importance adjectives in PDE

COBUILD		<i>essential</i>			<i>crucial</i>			<i>important</i>		
		n	N	%	n	N	%	n	N	%
prop	<i>that</i>	1	0.0024	0.42	2	0.0048	3.85	38	0.090	2.62
	<i>to</i>	0	0.00	0.00	0	0.00	0.00	2	0.0048	0.14
prop/ mand	<i>that</i>	0	0.00	0.00	0	0.00	0.00	8	0.019	0.55
	<i>to</i>	0	0.00	0.00	0	0.00	0.00	1	0.0024	0.07
mand	<i>that</i>	117	0.28	48.95	27	0.064	51.91	433	1.03	29.88
	<i>to</i>	121	0.29	50.63	23	0.055	44.23	967	2.30	66.74
Total		239	0.57	100	52	0.12	100	1,449	3.44	100

Table 38. The distribution of propositional and mandative complements with the appropriateness adjectives in PDE

COBUILD		<i>appropriate</i>			<i>proper</i>			<i>fitting</i>		
		n	N	%	n	N	%	n	N	%
prop	<i>that</i>	33	0.078	24.81	2	0.0048	8.00	30	0.071	81.08
	<i>to</i>	2	0.0048	1.50	1	0.0024	4.00	1	0.0024	2.70
prop/ mand	<i>that</i>	6	0.014	4.51	2	0.0048	8.00	1	0.0024	2.70
	<i>to</i>	2	0.0048	1.50	2	0.0048	8.00	0	0.00	0.00
mand	<i>that</i>	6	0.014	4.51	3	0.0071	12.00	0	0.00	0.00
	<i>to</i>	84	0.20	63.16	15	0.036	60.00	5	0.012	13.51
Total		133	0.32	100	25	0.059	100	37	0.088	100

Tables 37 and 38 show that ECs with the six adjectives studied here combine with both mandative and propositional clausal complements in Present-day English. However, we can note considerable differences within the distribution of the two complement types, which for the propositional com-

plements cluster in terms of the two subsets of adjectives. With the importance adjectives *essential*, *crucial* and *important*, propositional complements take up only a few percentages, with *crucial* reaching the highest relative frequency (3.85%). With the appropriateness adjectives *appropriate*, *proper* and *fitting*, by contrast, propositional complements account for 26.32% (or 32.33%), 12.00% (or 28.00%), and 83.78% (or 86.49%) respectively (the percentages between brackets adding bridging contexts to the unambiguous cases). Assuming that high frequency reflects unmarkedness (Haspelmath 2008), we can draw two major conclusions. Firstly, it is mandative complements that are generally the unmarked complementation type with importance and appropriateness adjectives, with the exception of *fitting*. Secondly, propositional complements are a much more marked and peripheral option with importance adjectives than with appropriateness adjectives.

The overall distribution of the mandative complements mirrors the clusters of the propositional ones inversely: mandative complements form a considerable majority with *appropriate* and *proper* and an overwhelming majority with the importance adjectives. However, the distribution of the formal subtypes of mandative clauses does not correlate in any clear way with the two classes of adjectives. With *important*, *appropriate*, *fitting* and *proper*, infinitival complements prevail, whereas with *essential* and *crucial* *to*-infinitives and *that*-clauses occur in comparable proportions (cf. Van Linden 2010a: 39–40). These figures thus give us a more nuanced picture than the general counts given in section 5.2.3, Tables 31 and 32.

In this section it has become clear that the mandative complements, and hence also the deontic meanings, of the adjectives in ECs constitute the unmarked option in Present-day English, except for *fitting*. In what follows, it will be shown that the synchronic constructional variation can be regarded as a reflection of diachronic processes of change. I will show that the mandative complements, which predominate in Present-day English, came first diachronically. It will also be found that the propositional complements developed from the mandative ones, and that this happened in two different ways, according to the semantic class of adjectives. Before I move on to this diachronic description, I will first survey Present-day English patterns of combined complementation, which I will show are crucial to the development of propositional complements with one class of adjectives.

6.2.3. Secondary complements

This section inventories the combined patterns of complementation found with the adjectives in Present-day English (for more examples, see also sections 2.3.2 and 5.2.2, and Van linden and Davidse [2009: 188–189]). As pointed out above, such patterns involve a primary complement that functions as an argument of the matrix clause, which itself takes a further clausal complement, termed a ‘secondary’ complement. In the data, the primary complement is invariably of the mandative type (typically in deontic constructions), but the secondary complement may be either mandative or propositional. In most cases, the primary mandative complement is expressed by a *to*-infinitive, which may be followed by a mandative *that*-clause, as in (18), or a propositional *that*-clause, as in (19).

- (18) Whichever of these forms of treatment you choose, it is **important** to ensure that you go to someone who is properly trained and experienced. Try to see someone who has been recommended to you, and always check on their credentials. (CB, ukbooks)
- (19) A pre-existing carving of a mother and her child ... could have come to be connected with the female pope for no other reason than it happened to stand in or near the street which Martin Polonus’ interpolator associated with her downfall. It is **vital** to remember that rumours about the avoidance of this street by the popes began to appear nearly one hundred years before the stone image became a part of the standard story. (CB, ukbooks)

Especially the pattern in (19) is fairly frequent in Present-day English: the *to*-infinitival extraposed subject comprises a cognition predicate (such as *remember*) and a secondary *that*-clause. Importantly, this mandative-propositional pattern has a specific semantic-pragmatic value; the speaker uses this construction to encourage the hearer to focus mentally on the propositional content of the *that*-clause. Therefore, this pattern bears a close pragmatic resemblance to the single proposition pattern (e.g. [2] in section 6.1). In section 8.3.3, I will return to this pattern and I will present arguments to regard it as a partially filled construction, namely the ‘mental focus construction’.

The data show that the secondary complement dependent on a primary mandative one can also be an indirect question, as in (20) and (21). These indirect questions are ranged with propositional complements (Halliday 1994: 241), because they refer to SoAs that are located relative to the time of utterance. They are concerned with arguable truth-claims: indirect polar

interrogatives as in (20) inquire about the actualization of an SoA, while indirect *wh*-interrogatives as in (21) presuppose actualization of the SoA but represent the *wh*-element as a variable (Huddleston and Pullum 2002: 902).

- (20) When looking at the deeds, it is **essential** to see whether your land and your neighbours' land were ever owned by the same person at the same time. (CB, ukmags)
- (21) I am surprised at the referee's attitude. We could not play or build a pattern and continuity. It is **important** to understand why we are conceding penalties so we can rectify things. (CB, today)

Very rarely, we also find primary mandative *that*-clauses, which are in turn complemented by a mandative *that*-clause, as in (22), or a propositional one, as in (23). The infrequency of this pattern with two successive finite (*that*-)clauses can be explained by the *horror aequi* principle, "the widespread (and presumably universal) tendency to avoid the use of formally (near-)identical and (near-)adjacent grammatical elements or structures" (Rohdenburg 2003: 236) (see also section 5.2.3).

- (22) However the benefits payable towards the cost of your treatment may vary from insurer to insurer. It is therefore **essential** you check that your level of cover provides full reimbursement of the charges you will incur. (CB, ukephem)
- (23) "The school is as safe an environment as it can possibly be because of the action that's been taken," she said. "It's **important** that people realise that this is not something that's lurking in the school building." (CB, times)

Tables 39 and 40 present the absolute and relative frequencies of the combined complementation patterns discussed above. These tables indicate that, with 79.22% of the total, the combined pattern with secondary propositions is much more common than that with secondary mandatives (20.78%). Put differently, in Present-day English the combined patterns are used mainly with the effect of associating a proposition with the adjectives. It was also noted that there is a striking pragmatic resemblance between the single proposition pattern and the combined pattern.

Moreover, it can be seen that the two sets of adjectives differ markedly in terms of frequency of the mandative-propositional pattern. This pattern is more frequent with the importance adjectives than with the appropriateness adjectives, with which it is extremely rare (*appropriate, proper*) to absent

(*fitting*). Therefore, these data suggest that the diachronic paths leading to the present situation will partly differ for the two sets of adjectives. It will be hypothesized that in the case of the importance adjectives, the combined pattern played a crucial role in the diachronic process leading to the single proposition pattern.

Table 39. The distribution of combined complementation patterns with the importance adjectives in PDE

COBUILD	<i>essential</i>			<i>crucial</i>			<i>important</i>		
	n	N	%	n	N	%	n	N	%
to-mand + prop	13	0.031	59.09	2	0.0048	28.57	195	0.46	65.22
that-mand + prop	2	0.0048	9.09	2	0.0048	28.57	48	0.11	16.05
total 2° prop	15	0.036	68.18	4	0.0095	57.14	241	0.57	80.60
to-mand + mand	5	0.012	22.73	3	0.0071	42.86	47	0.11	15.72
that-mand + mand	2	0.0048	9.09	0	0.00	0.00	9	0.021	3.01
total 2° mand	7	0.017	31.82	3	0.0071	42.86	56	0.13	18.73
Total	22	0.052	100	7	0.017	100	299	0.71	100

Table 40. The distribution of combined complementation patterns with the appropriateness adjectives in PDE

COBUILD	<i>appropriate</i>			<i>proper</i>			<i>fitting</i>		
	n	N	%	n	N	%	n	N	%
to-mand + prop	2	0.0048	40.00	1	0.0024	100	0	0.00	-
that-mand + prop	0	0.00	0.00	0	0.00	0.00	0	0.00	-
total 2° prop	2	0.0048	40.00	1	0.0024	100	0	0.00	-
to-mand + mand	3	0.0071	60.00	0	0.00	0.00	0	0.00	-
that-mand + mand	0	0.00	0.00	0	0.00	0.00	0	0.00	-
total 2° mand	3	0.0048	60.00	0	0.00	0.00	0	0.00	-
Total	5	0.012	100	1	0.0024	100	0	0.00	-

6.3. Diachronic development of mandative complements

This section looks at the relative diachronic frequency of the two semantic types of complement, and it will show that for each adjective the mandative pattern predates the propositional one. The data presented below also allow us to trace the development of the formal types of mandative complements. Tables 41 to 46 detail the distribution of primary propositional and mandative complements, cross-classified with their formal realization as *to*- or *that*-clause. As the earliest attestations of clausal complements with the ad-

Table 41. The diachronic distribution of primary propositional and mandative complements of *be important*

<i>important</i>		Fr	1570– 1640	1640– 1710	1710– 1780	1780– 1850	1850– 1920	1990– 1995
		n	1	29	346	691	776	2,598
		N	0.15	1.49	11.39	12.07	12.41	6.17
prop	<i>that</i>	n	-	-	0	0	1	38
		N	-	-	0.00	0.00	0.016	0.090
		%	-	-	0.00	0.00	2.33	2.62
	<i>to</i>	n	-	-	0	0	0	2
		N	-	-	0.00	0.00	0.00	0.0048
		%	-	-	0.00	0.00	0.00	0.14
prop/ mand	<i>that</i>	n	-	-	0	0	0	8
		N	-	-	0.00	0.00	0.00	0.019
		%	-	-	0.00	0.00	0.00	0.55
	<i>to</i>	n	-	-	0	0	0	1
		N	-	-	0.00	0.00	0.00	0.0024
		%	-	-	0.00	0.00	0.00	0.07
mand	<i>that</i>	n	-	-	0	20	15	433
		N	-	-	0.00	0.35	0.24	1.03
		%	-	-	0.00	55.56	34.88	29.88
	<i>to</i>	n	-	-	1	16	27	967
		N	-	-	0.033	0.28	0.43	2.30
		%	-	-	100	44.44	62.79	66.74

Table 42. The diachronic distribution of primary propositional and mandative complements of *be essential*

<i>essential</i>		Fr	1570– 1640	1640– 1710	1710– 1780	1780– 1850	1850– 1920	1990– 1995
		n	2	40	94	174	285	478
		N	0.31	2.06	3.09	3.04	4.56	1.14
prop	<i>that</i>	n	-	0	0	0	0	1
		N	-	0.00	0.00	0.00	0.00	0.0024
		%	-	0.00	0.00	0.00	0.00	0.42
mand	<i>that</i>	n	-	1	1	2	7	117
		N	-	0.51	0.033	0.035	0.11	0.28
		%	-	100	100	40	77.77	48.95
	<i>to</i>	n	-	0	0	3	2	121
		N	-	0.00	0.00	0.052	0.032	0.29
		%	-	0.00	0.00	60	22.17	50.63

Table 43. The diachronic distribution of primary propositional and mandative complements of *be crucial*

<i>crucial</i>		Fr	1570– 1640	1640– 1710	1710– 1780	1780– 1850	1850– 1920	1990– 1995
		n	0	0	0	0	6	193
		N	0.00	0.00	0.00	0.00	0.096	0.46
prop	<i>that</i>	n	-	-	-	-	-	2
		N	-	-	-	-	-	0.0048
		%	-	-	-	-	-	3.85
mand	<i>that</i>	n	-	-	-	-	-	27
		N	-	-	-	-	-	0.064
		%	-	-	-	-	-	51.91
	<i>to</i>	n	-	-	-	-	-	23
		N	-	-	-	-	-	0.055
		%	-	-	-	-	-	44.23

Table 44. The diachronic distribution of primary propositional and mandative complements of *be appropriate*

<i>appropriate</i>		Fr	1570– 1640	1640– 1710	1710– 1780	1780– 1850	1850– 1920	1990– 1995
		n	4	1	0	110	70	323
		N	0.61	0.051	0.00	1.92	1.12	0.77
prop	<i>that</i>	n	-	-	-	0	0	33
		N	-	-	-	0.00	0.00	0.078
		%	-	-	-	0.00	0.00	24.81
	<i>to</i>	n	-	-	-	0	0	2
		N	-	-	-	0.00	0.00	0.0048
		%	-	-	-	0.00	0.00	1.50
prop/ mand	<i>that</i>	n	-	-	-	0	0	6
		N	-	-	-	0.00	0.00	0.014
		%	-	-	-	0.00	0.00	4.51
	<i>to</i>	n	-	-	-	0	0	2
		N	-	-	-	0.00	0.00	0.0048
		%	-	-	-	0.00	0.00	1.50
mand	<i>that</i>	n	-	-	-	0	0	6
		N	-	-	-	0.00	0.00	0.014
		%	-	-	-	0.00	0.00	4.51
	<i>to</i>	n	-	-	-	2	2	84
		N	-	-	-	0.035	0.32	0.20
		%	-	-	-	100	100	63.16

jectives, i.e. with *proper* and *fitting*, date from the period 1570–1640, this section only discusses data from that period onwards.

If we concentrate on the development of the semantic types of complement, the figures show that mandatives generally predominate. The skew towards mandative complements found in the synchronic data (between 60% and 99%, except with *fitting*: 10.81%) proves to be preceded by even stronger skews in the diachronic data. Propositional complements show up later than mandatives, and at first in extremely low frequencies. The distribution of complements with *fitting*, the only adjective to have a predominance of propositions in Present-day English, was also skewed strongly towards mandatives in all the preceding stages. The data thus confirm that mandative complements constitute the original complementation pattern for the importance and the appropriateness adjectives studied here. As discussed in section 6.2.1, these complements correlate with the deontic meaning of the adjectives in the matrix clause (or, in the cases of *essential* and *crucial*, possibly with dynamic meanings).

If we focus on the development of the formal types of the mandative complements, *to*-infinitives generally prevail as the most common coding form throughout the various periods. They predominate with *appropriate*, *proper*, *fitting* and the frequent *important*, but not with *essential* and

Table 45. The diachronic distribution of primary propositional and mandative complements of *be fitting*

<i>fitting</i>		Fr	1570– 1640	1640– 1710	1710– 1780	1780– 1850	1850– 1920	1990– 1995
	n		4	9	6	35	40	78
	N		0.61	0.46	0.20	0.61	0.64	0.19
prop	<i>that</i>	n	0	0	0	0	2	30
		N	0.00	0.00	0.00	0.00	0.032	0.071
		%	0.00	0.00	0.00	0.00	28.57	81.08
	<i>to</i>	n	0	0	0	0	0	1
		N	0.00	0.00	0.00	0.00	0.00	0.0024
		%	0.00	0.00	0.00	0.00	0.00	2.70
prop/ mand	<i>that</i>	n	0	0	3	3	2	1
		N	0.00	0.00	0.099	0.052	0.032	0.0024
		%	0.00	0.00	100	30	28.57	2.70
mand	<i>that</i>	n	0	0	0	2	2	0
		N	0.00	0.00	0.00	0.035	0.032	0.00
		%	0.00	0.00	0.00	20	28.57	0.00
	<i>to</i>	n	1	2	0	5	1	5
		N	0.15	0.10	0.00	0.087	0.016	0.012
		%	100	100	0.00	50	14.29	13.51

crucial (cf. Van linden 2010a: 39–40). Moreover, it can be seen that the adjectives which currently favour mandative *to*-infinitives have basically done so from the beginning; it is not the case that *to*-infinitives have taken over from *that*-clauses (cf. Rohdenburg [1995], who notes a continued replacement of *that*-clauses by *to*-clauses for manipulative verbal matrices in the 17th and 18th centuries). The short-lived deviations from this overall development all occurred in Late Modern English, for example in the period 1780–1850 with *important* and in the period 1850–1920 with *essential*. The tables also show that the distinction between importance and appropriateness adjectives does not play any role in the distribution of the formal subtypes of the mandative complements.

Table 46. The diachronic distribution of primary propositional and mandative complements of *be proper*

<i>proper</i>	Fr	1570– 1640	1640– 1710	1710– 1780	1780– 1850	1850– 1920	1990– 1995	
	n	25	332	908	896	552	150	
	N	3.83	17.08	29.89	15.65	8.83	0.36	
prop	n	0	0	0	0	1	2	
	<i>that</i>	N	0.00	0.00	0.00	0.00	0.016	0.0048
		%	0.00	0.00	0.00	0.00	5.00	8.00
	n	0	0	0	0	2	1	
	<i>to</i>	N	0.00	0.00	0.00	0.00	0.032	0.0024
		%	0.00	0.00	0.00	0.00	10.00	4.00
prop/ mand	n	0	0	1	1	2	2	
	<i>that</i>	N	0.00	0.00	0.033	0.017	0.032	0.0048
		%	0.00	0.00	0.51	0.63	10.00	8.00
	n	0	1	0	2	1	2	
	<i>to</i>	N	0.00	0.051	0.00	0.035	0.016	0.0048
		%	0.00	9.09	0.00	1.26	5.00	8.00
mand	n	0	0	10	19	5	3	
	<i>that</i>	N	0.00	0.00	0.33	0.33	0.080	0.0071
		%	0.00	0.00	5.10	11.95	25.00	12.00
	n	2	10	185	137	9	15	
	<i>to</i>	N	0.31	0.51	6.09	2.39	0.14	0.036
		%	100	90.91	94.39	86.16	45.00	60.00

6.4. Diachronic development of propositional complements

The flip side of the diachronic prevalence of mandative complements discussed in the previous section is that primary propositional complements

appeared later and have remained a minor option with all adjectives but *fitting*. This section focuses on the diachronic processes that have led to the synchronic distribution of propositional complements. As suggested in section 6.2.3, we also have to include propositions occurring as secondary complement of a mandative in our analysis. In what follows, two pathways of change will be presented, which may have influenced each other ‘along the way’. More generally, these pathways constitute evidence in favour of the diachronic applicability of the conceptual map.

Table 47 presents the distribution of propositional and mandative + propositional complements with the six adjectives, with primary complements marked with 1° and secondary ones with 2° (remember that these can be *that*-clauses or indirect questions (IQ), cf. section 6.2.3). The numbers between square brackets indicate bridging contexts, which support both a mandative and a propositional reading (see section 6.2.2).

As observed in section 6.3, all six adjectives originally occurred in modal constructions with mandative complements only. Interestingly, with all the adjectives, unambiguous propositional complements first appear as secondary complement of a mandative clause. That is, sooner or later they all developed the combined mandative-propositional pattern, in which the mandative complement contains a verb of cognition or verbalization such as *observe, notice, remember, show, inquire, point out*, etc., typically coded as *to*-infinitive. The examples below feature appropriateness adjectives; examples with importance adjectives were given in section 6.2.3.

- (24) It is here **proper** to observe, that the father, according to the report of the passengers who came with him from Portugal to Mozambique, began to manifest that spirit of prophecy, which he had to the end of his days in so eminent a degree. (CEMET 1688 Dryden, *Life of Saint Francis Xavier*)
- (25) ... and there might be seasons when it would be equally **appropriate** to inquire, whether they prefer their appearance before the world, to the spiritual consolation of having made the injunctions of their blessed Saviour the rule of their conduct. (CLMETEV 1839 Ellis, *The women of England*)
- (26) It may next be **fitting** to enquire as to the humbler classes of society ... how much time they ought to be expected to consume in their regular and stated occupations, and how much would remain to them for relaxation and leisure. (CLMETEV 1831 Godwin, *Thoughts on man*)

Semantically, this pattern conveys the desirability (deontic modality) of ‘considering’ or ‘communicating about’ the secondary propositional complement.

Table 47. The diachronic distribution of primary (1°) and secondary (2°) propositional complements of *be appropriate*, *be fitting*, *be proper*, *be important*, *be essential* and *be crucial*

Adjectives	Level	Comp form	1640–1710	1710–1780	1780–1850	1850–1920	1990–1995
<i>appropriate</i>	1°	<i>that</i>	-	-	-	-	33+[6] 0.078+[0.014]
		<i>to</i>	-	-	-	-	2+[2] 0.0048+[0.0048]
	2°	<i>that/</i> <i>IQ</i>	-	-	1 0.017	-	2 0.0048
<i>fitting</i>	1°	<i>that</i>	-	[3] [0.099]	[3] [0.052]	2+[2] 0.032+[0.032]	30+[1] 0.071+[0.0024]
		<i>to</i>	-	-	-	-	1 0.0024
	2°	<i>that/</i> <i>IQ</i>	-	-	1 0.017	1 0.016	-
<i>proper</i>	1°	<i>that</i>	-	[1] [0.033]	[1] [0.017]	1+[2] 0.016+[0.032]	2+[2] 0.0048+[0.0048]
		<i>to</i>	[1] [0.051]	-	[2] [0.035]	2+[1] 0.032+[0.016]	1+[2] 0.0024+[0.0048]
	2°	<i>that/</i> <i>IQ</i>	3 0.15	16 0.53	12 0.21	2 0.032	1 0.0024
<i>important</i>	1°	<i>that</i>	-	-	-	1 0.016	38+[8] 0.090+[0.019]
		<i>to</i>	-	-	-	-	2+[1] 0.0048+[0.0024]
	2°	<i>that/</i> <i>IQ</i>	-	1 0.033	4 0.070	10 0.16	241 0.57
<i>essential</i>	1°	<i>that</i>	-	-	-	-	1 0.0024
	2°	<i>that/</i> <i>IQ</i>	-	-	-	1 0.016	15 0.036
<i>crucial</i>	1°	<i>that</i>	-	-	-	-	2 0.0048
	2°	<i>that/</i> <i>IQ</i>	-	-	-	-	4 0.0095

However, this general picture is enriched if we also consider the bridging contexts in which the possibility of a propositional reading besides the mandative one emerged. We can observe that the primary complements of two of the appropriateness adjectives developed propositional readings (i)

prior to the combined pattern or (ii) at the same time as the combined pattern. The bridging contexts of *fitting* in the period 1710–1780 and that of *proper* in the period 1640–1710 exemplify the first and the second situation respectively. The same does not hold for the importance adjectives, which do not show any bridging contexts in the historical stages and only develop them in Present-day English with *important*. Moreover, the distribution of the propositional complements in Present-day English (see also Table 47) falls out differently for the two sets of adjectives. The appropriateness adjectives are construed mainly with primary propositional clauses. By contrast, the importance adjectives have relatively more propositional complements functioning as secondary complement to a primary mandative complement than as primary propositional complement. This suggests that the two sets of adjectives have developed propositional complements in different ways. In what follows, I will reconstruct these two distinct paths of development from mandative to propositional complementation (see also Van linden and Davidse 2009: 195–205).

6.4.1. The adjectives of importance

The adjectives of importance followed a path that can be regarded as a development of the mandative-propositional pattern. As detailed in Table 47, the prevalence of the mandative-propositional pattern over the primary propositional pattern is found throughout their development and right into Present-day English, even though the combined pattern emerged in different periods with the different adjectives: with *important* in the period 1710–1780, with *essential* in 1850–1920, and with *crucial* only in Present-day English. The normalized frequencies show that the combined pattern with *important* and *essential* increased systematically up to the present day, while keeping roughly a 10:1 ratio to the pattern with primary proposition. This hints at a development in terms of $A > A[B] > B$, in which the link between the mandative complementation construction (A) and the propositional one (B) is formed by a combination of the two complementation patterns, $A[B]$, with B ‘being a constituent of’ A (note that in the formula A and B refer to complement constructions rather than meanings of a single lexical item). For the resulting construction B with primary propositional complementation, two distinct pragmatico-semantic uses can be observed.

A first use has a close pragmatic correspondence to the mandative-propositional pattern. In examples (27) and (28), it is not the propositional content as such that is evaluated as important, but the speaker encourages the hearer to focus mentally on that specific proposition or claim.

- (27) I mean ... it ... it's **crucial** as well that he's pissed it's **crucial** that ... he's he's ... he's a drunk because a girl like Rita would walk through the door see that and know that there was another insecurity and another victim there right and that would give her the strength (CB, ukspok)
- (28) I'm not into just designing for those people with money. I mean I think it's really **important** that I want to reach as broad a field as possible <M01> Mm <F04> I mean I'm going to open a shop erm next month <M01> What a wedding shop <F04> just dedicated to weddings as well. (CB, ukspok)

In (27), for example, the speaker does not assess the proposition 'he's pissed' as 'crucial'; rather this example means 'it's crucial to note that he's very drunk'. Likewise, in (28), the speaker, the designer Elizabeth Emanuel, asks her interlocutor to focus mentally on her motivation in designing clothes: she wants to reach as many people as possible, not just the upper-class. These ECs with *essential*, *crucial* and *important* have roughly the same pragmatic effect as the ones in which the instruction to 'note' a propositional content is explicitly coded. What seems to have happened is that the mandative cognition or verbalization predicate was dropped from the combined pattern, while still being implied in some sense. This phenomenon can perhaps be conceived of as 'pragmatic persistence', in analogy with Hopper's (1991: 22) notion of lexical persistence. Whereas lexical persistence implies that the original lexical features of a grammaticalizing construction remain present in it to a certain degree,⁸⁴ pragmatic persistence here refers to the persistence of the pragmatic value associated with the original A[B] construction. Hence the $A > A[B] > B$ formula should be restated as $A > A[B] > B +> A$, with '+>' meaning 'implies'. All of this entails that the adjectives in examples like (27) and (28) are not used in a purely evaluative sense with regard to the dependent proposition. They thus refute Biber, Johansson, and Leech's (1999: 673) claim that ECs with importance adjectives always assess the significance of the dependent proposition.

However, in a number of PDE examples with *important* the proposition in the complement is *itself* judged to be important or significant. Consider the following examples.

84 A well-known example of lexical persistence is formed by the differences in the Present-day English uses of the future markers *will*, *shall* and *be going to*, which "can be understood as continuations of their original lexical meanings" (Bybee and Pagliuca 1987: 117).

- (29) It has been said that ‘gender is different more fundamental’. But even if this is the case, it is still less **important** that Jesus was a male, than that he was a human being – that he was of our flesh – our human flesh, not specifically male flesh. (CB, ukephem)

In (29), the proposition that Jesus was a male is assessed as ‘less important’ than the fact that he was a human being. This example can hardly be paraphrased with a mandative-propositional construction such as *it is less important to note that Jesus was a male, than (to note) that he was a human being*.

- (30) <F11> Erm I’ve been married for over twenty years <F01> Yes <F11> twelve of which erm I knew my husband was gay <F01> ... Mhm <F11> Now he’s had an awful lot of m problems with <ZF1> his <ZF0> his nerves and everything else and the upshot of it is that we separated in November ...<F11> The problem is that in a way I’m finding it difficult to distance myself from him <F01> ...<F01> Well let’s start at the beginning I think you’re <ZF1> w <ZF0> wonderful to have rung I think it’s so terrific that you rang it’s so **important** that you rang because your experience is far more common than people will be prepared to admit to you. (CB, ukspok)

Likewise, in (30) the fact the woman (*you*-person) has rung the speaker (of a radio programme) is evaluated as terrific and important, as the speaker thinks her story may render the listeners sensitive to the problems she has to face. Examples like (29) and (30) demonstrate that ECs with *important* have developed a more general commentative reading in which the significance of a propositional content as such is estimated.

At the same time, however, expressions like (29) and (30) also raise the question of whether this purely evaluative use of the construction with single propositional complement can also be seen as the outcome of the $A > A[B] > B+>A$ path. I believe a positive answer is the most plausible option in view of the prior emergence and continued strong prevalence of the combined pattern over the propositional pattern throughout the historical stages. We can presume that once ECs with *important* and single propositional complement were established as the result of the $A > A[B] > B+>A$ path, the pragmatic value of the hearer being made to focus mentally on the proposition faded away in some contexts. This suggests that the schematic pathway can be further refined in terms of $A > A[B] > B+>A (> B)$, with

(> B) indicating the optionality of a further development of ‘B+>A’-constructions such as (27)–(28) to ‘B’-constructions such as (29)–(30).

6.4.2. The adjectives of appropriateness

The adjectives of appropriateness followed a different path. Even though all three adjectives are found – albeit infrequently – in the mandative-propositional pattern from a certain period onwards (*proper* from 1640–1710, *appropriate* and *fitting* from 1780–1850 onwards), none of them develops a ‘mental focus’ use with a primary propositional complement similar to that in (27) and (28) above. Instead, I will argue that with the appropriateness adjectives primary propositional complements developed from primary mandative complements via bridging contexts.

The earliest bridging contexts in the data have a *to*-infinitival complement with *proper*. As we saw in the synchronic description (section 6.2.2, Tables 37 and 38), infinitival propositions occur only with the weak adjectives, not with the strong ones. The examples below involve hypothetical constructions with a perfect *to*-infinitive.

- (31) If there be any thing more in particular resembling the Copy which I imitate (as the Curious Reader will soon perceive) I leave it to show it self, being very well satisfy’d how much more **proper** it had been for him to have found out this himself, than for me to prepossess him with an Opinion of something extraordinary in an Essay began and finished in the idler hours of a fortnight’s time. (CEMET 1692 Congreve, *Incognita*)

In (31) the SoA referred to by the *for...to*-infinitive is part of the apodosis of a conditional construction: should some further imitation become obvious to the reader, then the writer is satisfied that it had been more proper *for him* (the reader) *to have found out this himself*. If we concentrate on the event ‘the reader found it out himself’ as preceding its evaluation as proper, then we read the *for...to*-clause propositionally. However, the hypothetical expression, taken from Congreve’s preface to his novel, also involves an element of potentiality, allowing for a mandative reading: the author thinks it is more proper for the reader to find out resemblances between the novel and model it imitates himself, than for the author to mention these.

- (32) I was invited to partake of some other feasts, and always had to complain of the quantity of provision and the length of time taken

to consume it; for it would not have been **proper** to have said devour, all went on so fair and softly. (CLMETEV 1796 Wollstonecraft, *Letters on Sweden, Norway and Denmark*)

In (32), the matrix *it would not have been proper* can be understood as assessing the hypothetical anterior SoA referred to by the *to*-complement, i.e. ‘my having said devour’. By contrast, the matrix can also be interpreted as judging that SoA morally unacceptable: ‘it was not proper for me to say devour’, which depicts the non-desirable action potentially. In both examples, the hypothetical context thus supports both a mandative and a propositional reading.

The second type of bridging context with the appropriateness adjectives is formed by *that*-clauses, typically with *should*, which can be used in its attitudinal or mandative sense (cf. Huddleston and Pullum 2002: 995, 1001). Below are examples with *fitting* and *proper* (see Van linden and Davidge [2009: 201] for earlier examples).

- (33) “Darling, it is; it’s no use hiding it I’m no longer to work at Duncombe’s foundry. ...” “But why did they turn you off, when the jury had said you were innocent?” “It was not just to say turned off, though I don’t think I could have well stayed on. A good number of the men managed to let out they should not like to work [un]der me again; there were some few who knew me well enough to feel I could not have done it, but more were doubtful; and one spoke to young Mr Duncombe, hinting at what they thought.” “Oh, Jem! What a shame,” said Mary, with mournful indignation. “Nay, darling! I’m not for blaming them. Poor fellows like them have nought to stand upon and be proud of but their character, and it’s **fitting** they should take care of that, and keep that free from soil and taint.” (CLMETEV 1848 Gaskell, *Mary Barton*)

The EC in (33) can be interpreted as the speaker’s positive evaluation of the fact that the fellows previously working under him have taken care of their character by speaking their mind to the boss’s son. In this reading, the form *should* is used in its attitudinal sense, and the *that*-clause functions as a propositional complement. However, (33) can also be read as a mandative construction: in the speaker’s opinion it is fitting or morally desirable that these fellows always take care of their character. In this reading, the auxiliary *should* has a deontic flavour. It can be noted that the factuality status of the SoA in the *that*-clause is ambivalent: the context shows that it has been

actualized, but at the same time the SoA is also still potential, as it may as well continue to be actualized.

- (34) It is quite right and natural that you should feel as you do except as regards one passage, the impropriety of which you will yourself doubtless feel upon reflection, and to which I will not further allude than to say that it has wounded me. You should not have said “in spite of my scholarships.” It was only **proper** that if you could do anything to assist me in bearing the heavy burden of your education, the money should be, as it was, made over to myself. (CLMETEV 1903 Butler, *The way of all flesh*)

Example (34) equally allows both for a propositional and a mandative reading. It can be inferred from the context (*as it was*) that the hearer received money for his studies from the speaker. Therefore, the expression can easily be interpreted as a positive evaluation of an established fact. However, given the presumption manifested by the speaker in the whole context, a deontic reading of the matrix followed by a mandative complement is also possible (‘it was morally necessary that you gave me the money’). All in all, the examples in (31)–(32) and (33)–(34) have shown that the earliest bridging contexts, characterized by an ambivalent factuality status of the SoAs referred to in their complements, involve hypothetical constructions with perfect infinitives or *that*-clauses with ambiguous *should*.

The data of *fitting* and *proper* illustrate that the transitional stage involving bridging contexts may cover a few periods, i.e. it may take some time before we find unambiguous propositional complements (cf. Table 47), which indicate that the adjectives have become polysemous between deontic and evaluative meaning. With both adjectives, bridging contexts are found from 1710–1780 on, but unambiguous examples such as (35) and (36) appear only in 1850–1920.

- (35) Her eyes were open, full of infinite pity and full of majesty, as if they discerned the boundaries of sorrow, and saw unimaginable tracts beyond. ... Her hands were folded round the sufferer, stroking him lightly, for even a goddess can do no more than that. And it seemed **fitting**, too, that she should bend her head and touch his forehead with her lips. (CLMETEV 1905 Forster, *Where angels fear to tread*)
- (36) Gradually her brain, recovering from its obsession, began to grasp the phenomena of her surroundings, and she saw that she was on a yacht, and that the yacht was moving. ... Nella all through her life

had had many experiences of yachting. ... She loved the water, and now it seemed deliciously right and **proper** that she should be on the water again. (CLMETEV 1902 Bennett, *The grand Babylon Hotel*)

In (35), the narrator pictures a scene in which Miss Abbott chastely kisses Philip, an event that is evaluated positively. In (36), the fact that Nella is on the water has been explicitly mentioned in the preceding discourse, and the narrator assesses this as right and proper (either from an omniscient perspective, or through the eyes of Nella). These examples comment on facts, and unlike in the cases of (33) and (34) it is hard to think of deontic readings in which these events are thought desirable. Neither can we point to clear links in terms of associated pragmatic inferences with the mandative-propositional pattern, which *fitting* and *proper* already manifested prior to the single propositional pattern (see Table 47). Therefore, the examples in (35) and (36) show that the propositional interpretation has become associated with the adjectives as a distinct reading.

From the discussion above, we can assume that the path followed by the appropriateness adjectives basically instantiates the customary $A > A/B > B$ schema proposed by Traugott and Dasher (2002), in which A is the original use, B the new use and A/B the transitional use with features of both A and B. Applied to the constructions studied here, A is the mandative *to-* or *that-*complement, B the propositional *to-* or *that-*complement, and A/B the *to-* or *that-*complement which forms a bridge from a mandative to a propositional reading. Since the appropriateness adjectives have all manifested the mandative-propositional pattern from relatively early on, we could still hypothesize that, by associating a proposition with the appropriateness adjectives, this combined pattern helped pave the way for the single proposition construction at a very abstract constructional level. However, more than this sort of indirect influence cannot be ascribed to the combined pattern, which is fairly infrequent with the appropriateness adjectives and has not led to a single proposition use that is semantically akin to the combined pattern (B+>A), i.e. one in which the hearer is made to focus mentally on that proposition.

With respect to the single proposition construction, the most recent data suggest a further development, namely the emergence of a specialized use of B. In this use, an aspect of the SoA in the propositional complement is related to a contextually relevant precedent or analogue. Rather than moral principles, it is this contextual link that is invoked by the speaker to evaluate the temporal, spatial or sociocultural embedding of the current event positively (see section 8.1.3). For example, in (5) in section 6.2.1 it is ex-

plained to the readers that Wolfson's feting of Gandy with a dinner and a firework was appropriate because Gandy himself was an excellent cook and organizer of the annual Guy Fawkes party for his college, traditionally celebrated with bonfires and fireworks. Similar examples with *proper* and *fitting* are given below.

- (37) It may be known as the Royal Opera House but this was ballet's night. On February 20, 1946, it was the ballet that reopened Covent Garden after the war with a performance of *The Sleeping Beauty*. So it was right and **proper** that on Tuesday, 50 years to the day later, the historic reawakening of one of the world's great houses should be marked by the ballet again, and with *Sleeping Beauty*. (CB, times)
- (38) SIR Elton John celebrated Ulster's new era of hope last night. The rock legend wowed a sell-out 15,000 crowd who flocked to Stormont Castle. ... Sir Elton performed the open air gig free after Prime Minister Tony Blair approached him personally. Many fans came simply to say thanks to the singer, who stood by the Province during the dark days of the Troubles. It was **fitting** that they should gather at the castle where the historic peace pact was thrashed out. (CB, sunnow)

Just like in all the preceding developmental stages (A, A/B, and B), this recent specialized use is found with both *that*-clauses, as in (37) and (38), and *to*-clauses, as in (39) below. This example comes from a letter to *The Times* about a special set of stamps celebrating the work of Robert Burns that will be out soon. In his letter, the writer points out why he feels it is fitting that the song *Auld Lang Syne* will be featured on the stamp with an overseas postage rate.

- (39) Sir, Robert Burns, a prolific letter-writer, would surely have been delighted that the Royal Mail's special set of stamps being issued on January 25 to celebrate his work are prompting letters to *The Times* (January 23). The Royal Mail recognises the fact that Burns was not the originator of the song, *Auld Lang Syne*. Probably the earliest version of the song, *Auld Kyndnes foryett*, was published in 1568. However, no version that comes close to Burns's has ever been found, so it is generally agreed it should be attributed to him. ... By reworking a traditional song Burns created what has become a universal anthem, and we think it is **fitting** for the song to be featured on a stamp which has an overseas postage rate. (CB, times)

The Present-day English data thus show that in addition to the more general evaluative meaning as in, for example, (35) above, constructions with appropriateness adjectives and propositional complements have developed a specialized use in which contextual links play a major role. In fact, this specialized use has become the predominant one with *appropriate* and *fitting*, as will be shown in section 8.1.3. However, the micro-processes leading to the specialized semantics of this recent pattern still need to be revealed.

Interestingly, the data show that *important*, which – like *fitting* – is found with a single proposition only from 1850–1920 on, manifests this construction in Present-day English too, as shown in (40) below, albeit very marginally. This development points to some interaction between the distinct developmental paths of propositional complements with the importance and appropriateness adjectives, allowing analogies to take effect.

- (40) He advised Lombardi to temper his “combative optimism” with a sense of “gradualism” (the step-by-step approach). “It’s a good thing that such ideas should be spread around,” Montini concluded, “they will bear fruit in due course.” It was **important** that in the midst of the triumphalist Holy Year Montini should be thinking of an alternative style of papacy. (CB, ukbooks)

6.5. Summary and questions for further research

This chapter has investigated the various construction types with adjectival matrices in extraposition constructions (ECs) from a functional perspective, with a focus on the interaction between matrix and complement. It has traced the development of propositional complement constructions out of mandative ones in a set of six adjectives: the importance adjectives *important*, *essential* and *crucial*, and the appropriateness adjectives *appropriate*, *proper* and *fitting*. In what follows, I summarize its synchronic and diachronic findings and indicate their relevance to the conceptual map.

The synchronic description has provided further arguments to distinguish between the modal and non-modal categories in the conceptual map, by reference to observations from the typological literature on complementation. Three semantic parameters pertaining to complement relations were looked at, i.e. the level of clause structure, semantic dependency and semantic integration. It was found that the modal and non-modal categories in the map have different values across all three parameters (see section 6.2.1). Within the modal categories, the distinction between dynamic and

deontic expressions appeared to involve only a difference in degree of semantic integration (in case we regard deontic matrices as desiderative predicates, and not as modal ones). In chapters 1 and 2 it was pointed out that views held in the domain of modality (and evaluation) regard the parameter of the presence of an attitudinal source as the only relevant one on the vertical axis of the conceptual map, setting apart attitudinal from situating categories. This is clearly in contrast with insights from the domain of complementation discussed and developed in this chapter, according to which the parameter of the factuality status, distinguishing between modal and non-modal categories, is far more salient than the first one. In chapter 8, presenting detailed study of Present-day English construction types, we will basically arrive at the same conclusion.

The diachronic description has shown that the upper two categories in the conceptual map are diachronically related: with the six adjectives studied here, which are currently polysemous between these two categories, non-modal evaluative expressions developed out of deontic constructions, along the following lines.

Apart from *crucial*, all the adjectives started off taking mandative complements expressing desired action roughly from Late Modern English on. In these ECs, the matrix has a deontic value, expressing the desirability of the realization of the SoA in the complement, e.g. *It may therefore be proper to limit any new Acts of naturalisation with such restrictions as may make the accession of strangers not dangerous to the public* (CEMET 1682–1687). These mandative complements generally took and take the form of *to*-infinitives, but with a sizeable minority coded by *that*-clauses. In other words, I found no analogue here of *that*-complements being diachronically superseded by *to*-complements, as has been observed for the Middle English period in section 5.2.3.

This original prevalence of mandative complements was somewhat encroached upon by the gradual emergence of propositional complements, giving rise to non-modal evaluative expressions. The diachronic data indicated that this new semantic type of complement developed along different paths with the two semantic classes. With the importance adjectives, propositions first showed up as secondary complements of primary mandative complements containing cognition or verbalization predicates such as *observe*, *remember*, *note*, *inquire*, *point out*, e.g. *It is ... important to observe, that no similar resolution stands on the council-books for any previous year* (CLMETEV 1830). These ECs still had primarily deontic meaning, conveying the desirability of ‘considering’ or ‘communicating about’ the secondary propositional complement. This path further continued through this mandative-propositional pattern: in certain contexts the mandative pre-

dicate was dropped, but its value still pragmatically persisted, e.g. *it's crucial as well that he's pissed* (CB, ukspok). This pragmatic value of urging the hearer to focus mentally on the proposition still characterizes current examples with a primary propositional complement. Crucially, it marks all examples with the strong adjectives *essential* and *crucial*, so that – at least pragmatically – the lexical boundaries in the conceptual map remain intact. A number of recent examples with the weak adjective *important*, however, have lost this pragmatic value and merely evaluate the propositional content of the complement as such, e.g. *it's still less important that Jesus was a male, than that he was a human being* (CB, ukephem). This development with the importance adjectives has been interpreted in terms of the path $A > A[B] > B > A (> B)$. Concerning the overall relative frequencies of the semantic types of complement, it was found that the importance adjectives are still predominantly construed with primary mandative complements in Present-day English.

The appropriateness adjectives, which are all weak adjectives, first appeared with primary mandative complements as well, and they also manifested the mandative-propositional pattern at some stage. This fact may have had a part in their taking single propositional complements at an abstract constructional level. More importantly, however, the diachronic data showed that all appropriateness adjectives first appeared with primary complements forming bridging contexts before they were found with genuine propositional complements. They thus moved along the well-established $A > A/B > B$ path, with the two formal variants (*that*-clauses and *to*-clauses) occurring at each stage. In addition to propositional complements, the three adjectives still combine with mandative complements in Present-day English. With *proper* and *appropriate*, mandative complementation even predominates, but less strongly so than with the importance adjectives.

The two paths summarized above are visualized in Figure 17. From the primary mandative complements, two pathways have branched off, associated with the two semantic classes of adjectives studied here. Apart from their shared first stage as mandative complement-taking predicates, members of the two adjective classes continue to show constructional analogy, represented by the symbol \sim , between some constructions that are part of the distinct paths towards propositional complements. Figure 17 shows the developmental relations as arrows pointing downwards, but the two pathways themselves mark an upward movement in the conceptual plane of the conceptual map.

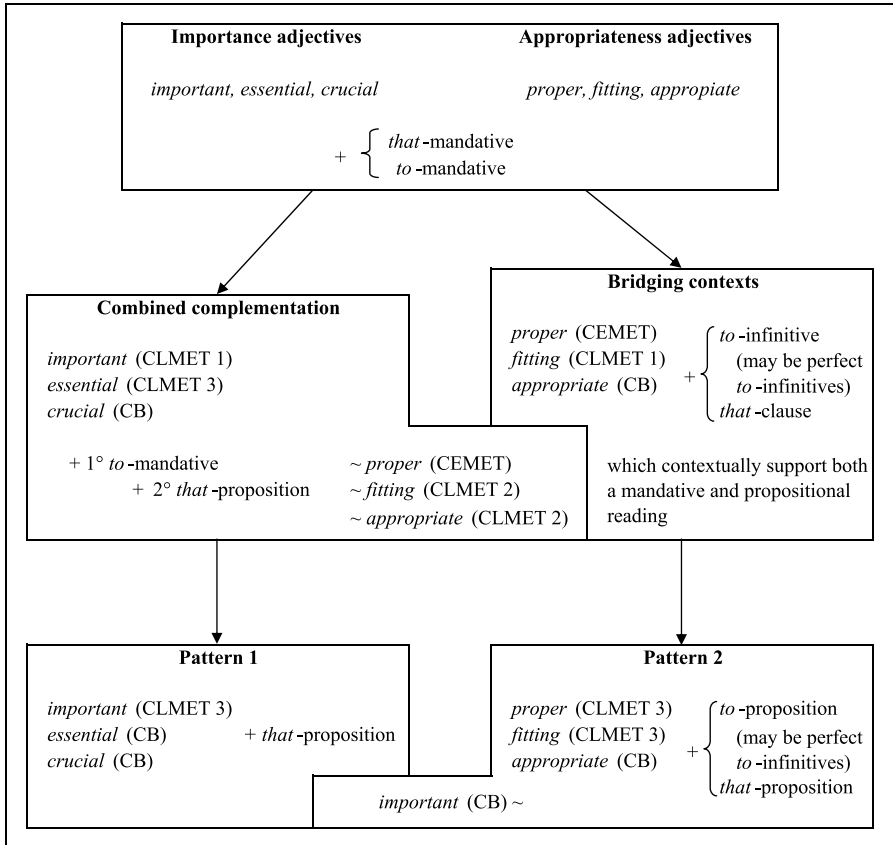


Figure 17. The development of propositional complements with the importance and appropriateness adjectives (CLMET 1: 1710–1780; CLMET 2: 1780–1850; CLMET 3: 1850–1920)

This chapter has charted the main lines of the diachronic development leading to the current synchronic system of construction types with importance and appropriateness adjectives. In the process, some diachronic mechanisms were looked at which warrant further reflection, such as pragmatic persistence and the developmental pattern in which the combination of A[B] rather than the more generally invoked bridging from A to B forms the crucial intermediate step. The development of the complementation of the adjectives in ECs also clearly involves ‘interlocking’ paths (see Vandewinkel and Davidse 2008) connecting importance and appropriateness adjectives, as shown most clearly by their very similar pattern of mandative complementation. Interlocking of paths was also observed in their inclination to constructional analogy, like with the combined mandative-

propositional pattern and the specialized ‘precedent/analogue’ propositional pattern, which are associated mainly with one set of adjectives but also found with the other. The general relevance to the study of constructional change of multigenesis, or the existence of multiple paths, will have to be investigated in future work.

6.6. Conclusions from the diachronic analysis

With this chapter on the interaction between matrix and complement, focusing on the development of non-modal evaluative constructions, we have reached the third and final part of the diachronic analysis of the adjectival constructions central to this book. The three parts of this analysis all have elaborated on the diachronic applicability of the conceptual map. Chapter 5, concentrating on the development of the clausal complement patterns, has demonstrated that the conceptual map applies across time; it has shown that as of Old English strong adjectives are found with mandative complements only, whereas weak adjectives pattern both with mandative and propositional complements. By contrast, together with chapter 4, which investigated the semantic development of the adjectival matrix, the present chapter has revealed the diachronic relations between the modal-evaluative categories in the conceptual map. The main conclusions of the three-part diachronic analysis are summarized in Figure 18, incorporating Figure 17 (section 6.5) and Figure 11 from section 4.8 into the conceptual map. The dashed box of the mental focus pattern (developed by the importance adjectives) indicates that it is different from the ‘normal’ propositional pattern (developed by the appropriateness adjectives) in the non-modal evaluative domain.

It can be noted immediately that all arrows in Figure 18 point upwards. On the basis of the diachronic case-studies, we could thus posit the following pathway:

- (41) lexical item > dynamic modality > deontic modality > non-modal evaluation

However, unlike the pathways observed for modal auxiliaries (see section 1.2.2), this pathway should be thought of as an abstract model, as in fact it is not instantiated by any single lexical item (except for *essential* and *crucial*, but only if we dispense with pragmatics). It should also be kept in mind that the adjectives concentrated on in chapters 4 and 6 are all from group C (see sections 4.1 and 6.1), i.e. they all came into the English lan-

guage from the Middle English period onwards. This might imply that the pathway does not apply to the adjectives of group A and B, i.e. Old English adjectives such as *niedþearflic* and *gedafenlic*, and persists such as *good* respectively. However, if we take into account the distinction between weak and strong adjectives, we can recast the overall pathway in (41) in terms of two implicational hierarchies, which together apply to all adjectives studied (i.e., of group A, B and C), in synchrony as well as diachrony. The hierarchies are presented below.

- (42) The conceptual hierarchy of strong adjectives:
dynamic modality > deontic modality
- (43) The conceptual hierarchy of weak adjectives:
deontic modality > non-modal evaluation

The hierarchy in (42) implies that if a strong adjective is used in a construction expressing deontic modality, it can also be used to express dynamic modality (but that, if a strong adjective is used in a construction expressing dynamic modality, it cannot be concluded that it can also be used to express deontic modality). The same goes for the hierarchy in (43): if a weak adjective is used in a construction expressing non-modal evaluation, it can also be used to express deontic modality (but if a weak adjective is used in a construction expressing deontic modality, it cannot be assumed that it can also be used to express non-modal evaluation). In short, the developments of the modal-evaluative categories expressed by the adjectival constructions are characterized by an upward movement in the conceptual plane of the conceptual map. The diachronic relations between the conceptual categories have been captured in two conceptual hierarchies, which apply in both diachrony and synchrony.

Finally, chapters 4 to 6 have not only corroborated the validity of the conceptual map for diachronic analysis, defining its vertical axis as a pathway of change, but they have also contributed to a better understanding of its general or synchronic validity. It is this topic that will be central to chapter 8. It will present a detailed synchronic account of the various types of constructions in which the adjectives are currently used. It will synthesize the three-part analytical approach of and the concepts used in the diachronic chapters, and it will concentrate on the constructional wholes of matrix and complement in the Present-day English adjectival constructions. In this way, it seeks to refine the conceptual distinctions that we have seen at work in the conceptual map so far.

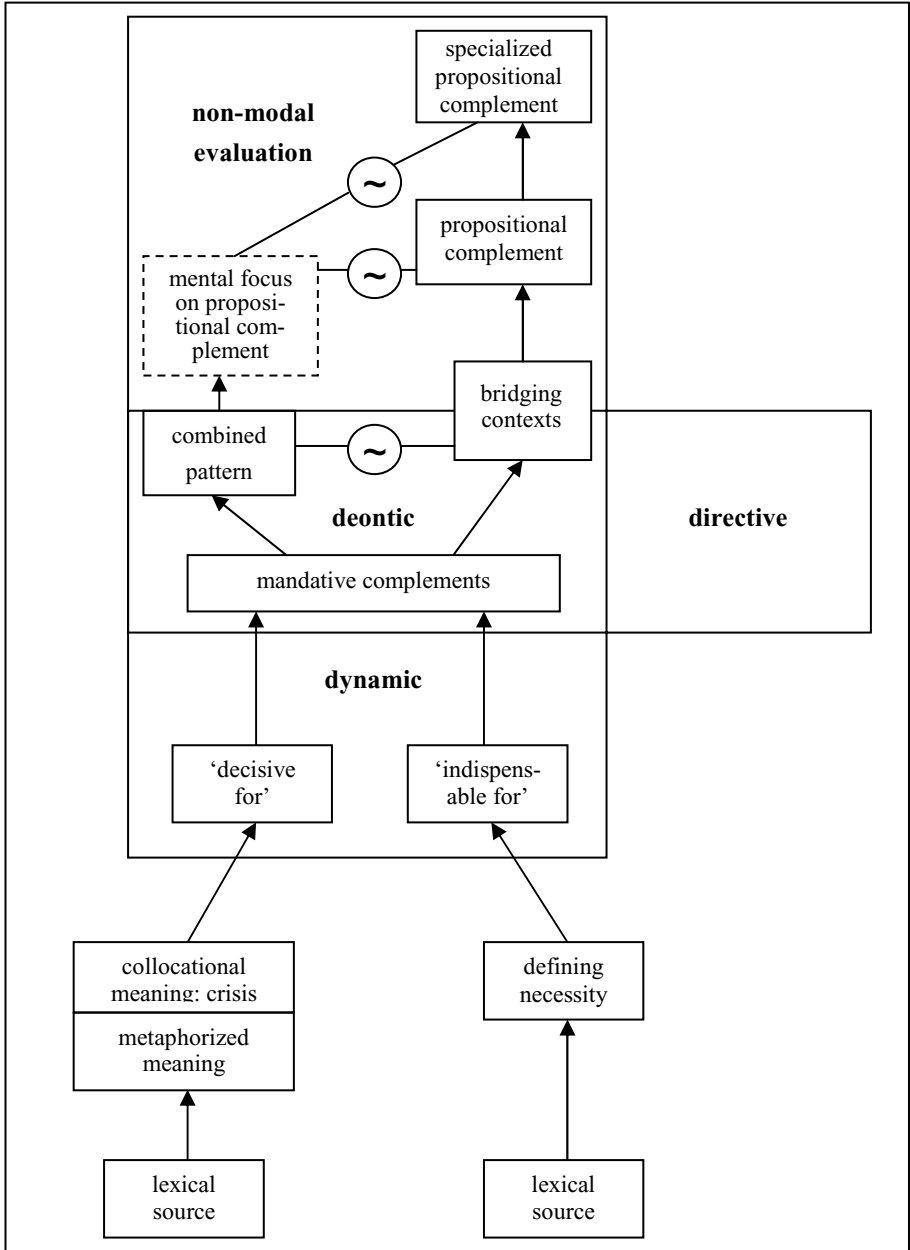


Figure 18. The diachronic relations between the modal-evaluative categories in the conceptual map

Chapter 7

Data and methods of the synchronic synthesis and refinement

This brief chapter discusses the data and methods used in the synchronic synthesis and refinement of the adjectival constructions central to this book, presented in the next chapter. Chapter 8 aims to refine the conceptual map presented in section 2.3 on the basis of the synchronic data of the modal-evaluative adjectives that have been studied in the previous chapters (see section 3.1) as well as the present-day data of adjectives expressing directive meaning. The latter are included to make detailed comparison of the internal organization of all the categories in the map possible. The total set of adjectives included in this synchronic study is given in Table 48. In the table, the directive items are in roman type, whereas the modal-evaluative adjectives are in italic type. As the directive adjectives are fairly infrequent in the COBUILD corpus, I will also use additional data from the Internet, in each case indicating the URL and date of access (in section 8.4).

Table 48. The weak and strong adjectives in the PDE samples in chapter 8

Weak adjectives (12)				Strong adjectives (10)			
Adjective	Freq	Adjective	Freq	Adjective	Freq	Adjective	Freq
advisable	70	<i>fitting</i>	37	compulsory	17	<i>necessary</i>	200
<i>appropriate</i>	133	<i>good</i>	200	<i>critical</i>	12	<i>needful</i>	21
<i>convenient</i>	33	<i>important</i>	200	<i>crucial</i>	52	obligatory	9
<i>desirable</i>	31	<i>profitable</i>	7	<i>essential</i>	200	<i>vital</i>	200
<i>expedient</i>	8	<i>proper</i>	25	<i>indispensable</i>	2		
<i>fit</i>	49	<i>suitable</i>	5	mandatory	3		

Chapter 8 not only uses a more expanded Present-day English dataset, it also uses additional types of analysis. Whereas in the diachronically oriented chapters the modal-evaluative adjectives are used in exhaustive samples of *that*- and *to*-clause constructions – for the Present-day English period also, the discussions in chapter 8 are based on two distinct types of analysis. The most inclusive analysis is a detailed qualitative and quantitative study of the 22 adjectives listed in Table 48, in either exhaustive samples (smaller than 200), or samples of 200 instances from the COBUILD corpus (see section 3.2). It should be noted that the sampling of the 200-

item sets was not entirely random. I took account of the distribution of types of matrix constructions (copular or transitive extraposition constructions, cf. section 5.1), that of *that*- and *to*-clauses, as well as that of mandative and propositional complements of the exhaustive samples so as to render the sets as representative as possible. The frequencies of the adjectives in the samples studied in chapter 8 are given in Table 48 as well.

In addition, chapter 8 also uses a type of collostructional analysis, namely a multiple distinctive collexeme analysis (Gries and Stefanowitsch 2004).⁸⁵ In general,

collostructional analysis always starts with a particular construction and investigates which lexemes are strongly attracted or repelled by a particular slot in the construction (i.e. occur more frequently or less frequently than expected). (Stefanowitsch and Gries 2003: 214)

The analysis performed here is based on exhaustive extractions of the adjectives in Table 48 from the COBUILD corpus, but it includes only constructions with extraposed *to*-clauses. For each adjective, the number of examples is given in Table 49.

Table 49. The adjectives and their number of *to*-clauses included in the multiple distinctive collexeme analysis

<i>advisable</i>	66	<i>desirable</i>	23	<i>important</i>	969	<i>profitable</i>	7
<i>appropriate</i>	88	<i>essential</i>	121	<i>indispensable</i>	2	<i>proper</i>	18
<i>compulsory</i>	15	<i>expedient</i>	8	<i>mandatory</i>	3	<i>suitable</i>	3
<i>convenient</i>	32	<i>fit</i>	49	<i>necessary</i>	478	<i>vital</i>	79
<i>critical</i>	5	<i>fitting</i>	6	<i>needful</i>	10		
<i>crucial</i>	23	<i>good</i>	278	<i>obligatory</i>	9		

The analysis is called a multiple distinctive collexeme analysis in that it takes 22 different constructions into account (i.e. extraposition constructions with 22 adjectives), and it looks at which lexemes (*to*-infinitives) are attracted or repelled by the *to*-infinitive slot of the various adjectival extraposition constructions and to which degree they are. To calculate the association strength between a particular *to*-infinitive (I) and an adjective (A), relative to the other *to*-infinitives and adjectives included in the analysis, we need four frequencies: (i) the frequency of I in extraposition constructions with A, (ii) the frequency of I in extraposition constructions with ad-

⁸⁵ I thank Tim Van de Cruys for his help with the perl scripts I needed to run this analysis on my data.

jectives other than A ($\neg A$), (iii) the frequency of A with *to*-infinitives other than I ($\neg I$), and (iv) the frequency of *to*-infinitives other than I with all adjectives other than A (cf. Stefanowitsch and Gries 2003: 218). These frequencies are schematically presented in a 2-by-2 contingency table in Table 50.

Table 50. The frequencies needed for a collexeme analysis (based on Stefanowitsch and Gries 2005: 6, Table 1)

	extraposition construction with A		extraposition construction with $\neg A$		row totals
<i>to</i> -infinitive I	(i)	Freq (I+A)	(ii)	Freq (I+ $\neg A$)	Freq (I)
$\neg I$	(iii)	Freq ($\neg I$ +A)	(iv)	Freq ($\neg I$ + $\neg A$)	Freq ($\neg I$)
column totals	Freq (A)		Freq ($\neg A$)		Freq (I+ $\neg I$) = Freq (A+ $\neg A$)

It is on the basis of these frequencies that the collexeme analysis computes a vast amount of probability tests, more specifically Fisher exact tests, which are reliable for low frequency data and which do not make distributional assumptions that are not justified in dealing with natural language data (see Stefanowitsch and Gries 2003: 217–218). For each adjective, the analysis results in specific p-values (i.e. ‘probability values’) for each *to*-infinitive, which can be ranked according to their strength of association. Table 51, for example, shows the ten lexemes that are most strongly attracted to the *to*-infinitive slot of the extraposed *to*-infinitive construction with *important* and the ten items that are most strongly repelled by it.

Table 51. The collexemes most strongly attracted to and repelled by the *to*-infinitive slot of the extraposed *to*-infinitive construction with *important* (cf. chapter 8, Table 76)

Collexeme	Distinctive for A (attracted)				Collexeme	Distinctive for B (repelled)			
	Obs. Freq. in A	Obs. Freq. in B	Fisher Yates p-value	Bonfer-roni correction		Obs. Freq. in A	Obs. Freq. in B	Fisher Yates p-value	Bonfer-roni correction
remember	46	6	3.12E-12	6.87E-11	see	11	74	2.52E-09	5.55E-08
realize	18	0	1.70E-07	3.74E-06	be_locative	1	26	6.81E-06	1.50E-04
note	21	2	1.14E-06	2.50E-05	go	5	26	1.77E-03	3.89E-02
try	23	6	4.85E-05	1.07E-03	make	11	33	1.27E-02	2.78E-01
understand	22	6	9.27E-05	2.04E-03	hear	0	7	2.12E-02	4.67E-01
make_sure	15	2	1.16E-04	2.56E-03	meet	0	6	3.68E-02	8.10E-01
stress	11	1	5.51E-04	1.21E-02	obtain	0	5	6.39E-02	1.41E+00
recognize	15	4	1.23E-03	2.71E-02	travel	0	5	6.39E-02	1.41E+00
verb_perspective	7	0	2.38E-03	5.24E-02	use	5	16	6.40E-02	1.41E+00
feel	6	0	5.66E-03	1.25E-01	discuss	2	9	9.09E-02	2.00E+00

The smaller the p-value, the stronger the attraction or repulsion, as the p-value indicates how likely we are to get a result at least as extreme as the observed case, assuming that the null hypothesis is true (i.e. that the association between the various *to*-infinitives and the adjective studied is equally strong). Specifically, Table 51 shows that *remember* is most strongly attracted to the extraposed *to*-infinitive construction with *important*, whereas *see* is most strongly repelled by it. With a p-value of 3.12E-12, the result for *remember* is highly significant, the standard level of significance being $\alpha=0.05$ (Stefanowitsch and Gries 2003: 239, note 6). (3.12E-12 means 3.12 multiplied by 10^{-12} ; 3.74E-06 means 3.74 multiplied by 10^{-6} , etc.) Table 51 also gives corrected p-values, which are arrived at by applying the Bonferroni correction to the original p-values. This correction is a 'post hoc comparison' or adjustment that is often performed in multiple testing applied to the same dataset (cf. Rietveld and Van Hout 2005: 65), such as the 22 collostructional analyses here. It is used because uncorrected results of multiple testing may falsely give the appearance of significance, as 1 out of 20 probability tests will appear to be significant at the $\alpha=0.05$ level purely due to chance (Stefanowitsch pc). I thus multiplied the Fisher exact p-values by the number of tests run, i.e. 22, to arrive at the corrected p-values. More generally, the (corrected) results of the multiple distinctive collexeme analysis give us information about the collocational preferences of the adjectives and the (relative) frequency of these collocations. As frequency is an important factor determining the degree to which a particular construction is entrenched (cf. Goldberg 1999), the results will be used in chapter 8 to adduce evidence for a number of partially filled constructions featuring the adjectives studied here.

Chapter 8

Synchronic constructions: Refinements of the conceptual map

This chapter proposes a synchronic synthesis of the adjectival constructions studied here, focusing – like chapter 6 – on the constructional wholes of matrix and complement. It substantiates the synchronic validity of the conceptual map (see section 2.3) by indicating its potential for semantic refinement. Framed by the synchronic synthesis, detailed analysis of Present-day English data shows that the categories of the map can still be subdivided. The refinement also bears out the internal consistency of the map in that each category on the vertical axis has a different internal organization, whereas the two adjacent categories on the horizontal axis have a similar one.

This chapter puts forward a typology of extraposition constructions with adjectival matrices, proposing subtypes within the realms of non-modal evaluative, deontic and dynamic meaning. With regard to these last two categories, I will elaborate on one of the conclusions of chapter 6, and I will argue that – contrary to what has been proposed in the literature (e.g. von Wright 1951b: 28, 36; Goossens 1985: 204; Palmer 2001: 9–10; Nuyts 2005, 2006) – it is not always straightforward to distinguish between deontic and dynamic modality. To explain this problem of delineation, I will draw on the diachronic analysis of the adjectival matrices proposed in chapter 4. In addition to the three qualificational categories, I will also discuss the illocutionary type of meaning included in the conceptual map, i.e. directive meaning.

Whereas the chapters of the diachronic analysis focused on the adjectival matrices (chapter 4), the patterns of clausal complementation (chapter 5), and the constructional wholes (chapter 6), this synchronic chapter is restricted to a constructional approach. It will show that the meaning of a construction as a whole is not always predictable from its constituent parts (cf. Goldberg 1995: 4; 1996: 68). In such cases, the constructions often form a separate subtype within a particular conceptual category. It will also become clear that not all refinements proposed in this chapter are constructionally motivated; some distinctions are made on a purely semantic basis, without correlations with constructional patterns. More generally, in refining the conceptual categories of the map, I will also pay attention to the distribution of the individual adjectives across the various subtypes. I will

thus indicate how they divide the modal-evaluative domain of the map among each other.

The discussion starts with the qualificational categories and moves through the conceptual map from top to bottom. This means that this chapter consecutively treats the category of non-modal evaluative meaning, bridging contexts between non-modal evaluative and deontic meaning, deontic modality and dynamic modality, with a focus on the distinction between the two. After the qualificational categories, it will concentrate on the illocutionary type of directive meaning. The main conclusions will then be incorporated in the conceptual map.

8.1. Non-modal evaluation

As discussed in several places above (e.g. section 2.2.3 and section 6.2.1), non-modal evaluative constructions involve an attitudinal source assessing a particular propositional content in terms of SoA-external principles. Crucially, this proposition is presupposed to be true. However, this does not necessarily mean that the SoA referred to in the proposition has already taken place. Rather, it implies that the hearer can easily assume the factuality status of the SoA. Two examples are given below (see also examples (5) and (6) in section 6.2.1).

- (1) I don't doubt his sincerity when he assures you of his love and fidelity but sadly I have doubts as to whether this commitment will last. ... It's **good** that he has been honest but you have to look to your future emotional security and sexual health. (CB, sunnow)
- (2) But Derry boss Brian Mullins refuses to accept the league clash will have much bearing on the Championship tie. He declared: "Whether or not it's **good** for the teams to be meeting so close to the Championship doesn't bother me. It's only a coincidence we've been paired together ..." (CB, sunnow)

In (1), the SoA referred to in the proposition that is evaluated as good clearly has taken place already; the perfect form *has been* locates the dependent SoA as anterior to the moment of assessment, which coincides with the temporal zero-point. In (2), by contrast, the SoA referred to in the propositional *to*-clause has not taken place yet at the moment of assessment: the teams, Derry and Monaghan, still have to meet next Sunday, which is close to the Championship. Yet, for the teams to be meeting twice within a relatively short period is represented here as a fact, and the attitudinal source,

which, as in (1), is the speaker, feels that it actually does not matter whether he should evaluate this fact positively or negatively. Generalizing from these two examples, we can conclude that non-modal evaluative expressions (in particular, their propositional complements) involve SoAs that are determined with respect to their factuality status, that is, they are either positively factual (as in [1] and [2]) or negatively factual (see section 2.2.3).

The diachronic analysis already showed that the category of non-modal evaluation includes two types of meaning (see section 6.4). One – very infrequent – type has the pragmatic value of making the hearer focus mentally on the proposition, as in (3) and (4) below. Thus it can hardly be considered as expressing true non-modal evaluative meaning. By contrast, the other type distinguished here, illustrated in (1) and (2), is genuinely evaluative. This type predominates in Present-day English, and apart from general commentative expressions as in (1), it also includes more specific types of evaluative meaning, such as, for example, the specialized use introduced in section 6.4.2 (e.g. [37] to [40]). The following discussions will home in on the mental focus type, as well as on the genuine evaluative type and its subtypes.

8.1.1. Mental focus on proposition

Some constructions with propositional complements involve the speaker encouraging the hearer to focus mentally on the propositional content of the complement, rather than the speaker's assessment of the propositional content itself (see section 6.4.1). In the Present-day English sample, this type of construction is very infrequent (4 instances in total), and the examples given below have been discussed earlier ([3] repeats [10] from section 4.2; [4] repeats [28] from section 6.4.1).

- (3) And the number of live births from IVF or as they call them in the clinics the take-home baby rate is about nine to ten per cent only on average. ... In in <ZF0> in this case <ZF1> it <ZF0> it is **essential** that it is human embryos which are researched on rather than for example mice ... because it's already been found that the human embryo has quite different growth requirements than those of other mammals. (CB, ukspok)

In (3), the speaker wants to call the hearer's attention to the fact that in the experiment talked about it is human embryos that are studied rather than, for example, mouse embryos. The construction used in the propositional

complement, i.e. an *it*-cleft, gives extra prominence to the most important piece of information, i.e. *human*. In the final *because*-clause, the speaker provides justification for this focus on *human* embryos. (According to Verstraete's [2007: 150–151, 198] analysis of *because*-clauses, the one in [3] has its own illocutionary force and is open to challenge by the hearer.)

- (4) I'm not into just designing for those people with money. I mean I think it's really **important** that I want to reach as broad a field as possible ... (CB, ukspok)

Like in (3), the speaker in (4) does not want to represent her intention to reach as many people as possible, as important or significant. Instead, she wants the hearer to take a mental note of this intention.

The specific nature of the mental focus type already suggests that not all adjectives studied here qualify for this type. The data show that the type is restricted to a set of importance adjectives in the sample, namely *crucial*, *essential* and *important*. Furthermore, the nature and origin of the type (see section 6.4.1) can explain a number of formal and tense-aspect-mood (TAM) properties of the matrix and complement of the mental focus construction. To make this point clear, I first give an example of a combined mandative-propositional construction in which the mental focus type can be assumed to originate.

- (5) It's your baby's birth, so make clear what you hope for right from the start. Once you go into labour, you may be too preoccupied to start explaining your wishes, so write a birth plan beforehand as a guide for your midwife and doctor to follow. ... It's important to talk your plan through with your partner so he knows exactly what you want and can speak out on your behalf. But it's also **essential** to remember that childbirth is never predictable so you will need to be prepared to compromise. (CB, ukmags)

As will be discussed in section 8.3.3, this type of deontic construction has an argumentative function: the speaker uses this construction to make the hearer focus on the secondary proposition (i.e. 'childbirth is never predictable'). We can thus see that the mental focus type has pragmatic affinity with the combined pattern. In addition to this pragmatic connection, we can also note some other types of parallels. For one, the complements of the mental focus type are invariably propositional *that*-clauses with (present) indicative finite forms; there are no examples with 'attitudinal *should*' (Huddleston and Pullum 2002: 1001). In the case of the deontic combined

pattern, the secondary complements are all *that*-clauses as well,⁸⁶ although they can be propositional or mandative. In any case, a secondary *that*-clause with *should* always has mandative meaning; there are no examples of propositional *that*-clauses with attitudinal *should* either (see section 8.3.3). A second parallel involves the matrices of both constructions. The matrices of the mental focus type all have present indicative copular finite verbs, locating the assessment, or rather the encouragement to focus, in the here-and-now of the speech situation, as is characteristic of a speech act. The same goes for the examples of the deontic combined pattern (except for some constructions with verbalization predicates [e.g., *say, tell, stress*] rather than cognition ones [e.g., *remember, note, realize*], see section 8.3.3). In addition, the matrix finite forms of both constructions are always affirmative. In fact, similar expressions with negative matrices would be pragmatically incongruous: it seems odd for the speaker to instruct the hearer not to focus on something. In (6) below, I present the negated version of (5) above.

- (6) ? But it's not **essential** to remember that childbirth is never predictable.

In conclusion, the mental focus construction is a rather infrequent type of expression (at least in the sample used, cf. Table 52) which pragmatically resembles specific deontic examples with combined complementation. This pragmatic correspondence explains the polarity and TAM marking of the matrix finite forms: all examples have affirmative present indicative matrices, cf. Table 53. The abbreviations used in this and the following

Table 52. The adjectives occurring in the mental focus type

Adjective	Number of occurrences in the sample	Number of non-modal evaluative uses	Number of mental focus uses			% of mental focus uses	
			<i>that</i>	<i>to</i>	total	relative to sample	relative to NME
<i>crucial</i>	52	2	2	0	2	3.85	100.00
<i>essential</i>	200	1	1	0	1	0.50	100.00
<i>important</i>	200	6	1	0	1	0.50	16.67
Total	452	9	4	0	4	0.88	44.44

86 Unlike in sections 6.2.3 and 6.4, I here distinguish between secondary complements that are *that*-clauses (either mandative or propositional ones), and those that indirect questions (see section 8.3.3).

Table 53. The TAM properties of matrix and *that*-clause finite forms of the mental focus type

Type of finite	Fr	indicative present
matrix (4)	n %	4 100.00
<i>that</i> -clause (4)	n %	4 100.00

tables are: Fr: frequency; n: absolute frequency; %: relative share; NME: non-modal evaluative use.

8.1.2. Genuine non-modal evaluative use

Whereas the mental focus type has primarily a pragmatic value, the majority of examples with propositional complements in the sample (about 98%) express a genuine subjective assessment of a propositional content. They involve an attitudinal source who evaluates a propositional content on the basis of SoA-external, e.g. moral, grounds. This type of meaning is found only with weak adjectives (unlike the mental focus type, which is also found with the strong adjectives *essential* and *crucial*), but not with all adjectives from the sample. The adjectives that are not attested in non-modal evaluative expressions include *desirable*, *expedient*, *fit*, *profitable* and *suitable*.

Genuine non-modal evaluative expressions are very diverse in terms of formal and semantic properties, much more so than the mental focus type. I will argue that within this heterogeneous category we can distinguish three more specific subtypes with typical constructional patterns, namely a specialized use (introduced in section 6.4.2), a locative use, and a knowledge/acquisition of knowledge (KAK) use. Before I move on to these specific types, I will first focus on the general commentative use.

The majority of non-modal evaluative constructions in the sample express a very general commentative meaning. They not only show a variety of lexical items, featuring most of the weak adjectives, but also diversity in matrix construction type, matrix finite type, and complement type. In terms of matrix construction types, for example, the general commentative constructions include copular extraposition constructions (64 hits) and complex transitive constructions (3 hits) (see section 5.1.2). Examples are given in (7) and (8) respectively; the latter example has been discussed in more detail in sections 2.3 and 5.1.2.

- (7) and it's been **convenient** for the UDC [Urban Development Corporation, AVL] that that organization has existed 'cos it's meant ... that they could work through it and they've not had to <F01> Yes. <M01> sort of go <ZF1> more <ZF0> more widely into consultation and er involvement of er groups. (CB, ukspok)
- (8) The village was marginally bigger than the last one and, ... there was something strangely innocent about the unblemished beauty of the surrounding countryside. She thought it **fitting** that Michelle should have been brought there. (CB, ukbooks)

We also find variety in the TAM marking of the matrix finite forms. These can be indicative forms, such as present indicative (1), present perfect indicative (7) or past indicative (8), as well as modalized forms, such as *may* in (9).

- (9) [W]ith a dynamic new chief executive in Celia Godsall, there are hopes that, in time, British ice skating may be hauled out of the doldrums. It may be **appropriate** that Godsall has joined skating from the life-saving world. From deep water, she realistically suggests, to thin ice. (CB, times)

In this example, the attitudinal source expresses an epistemic assessment of his or her non-modal evaluative assessment of a propositional content (that is, the epistemic modal has the non-modal evaluative expression in its scope). The speaker expresses that the professional background of the new chief executive Celia Godsall may be appropriate for the expected new spirit in the British ice skating world.

Notably, the examples expressing general non-modal evaluation show a diversity of complement types as well, as they are found with both *that*-clauses and *to*-clauses, cf. (1) and (2) respectively. Moreover, the set of propositional *that*-clause constructions shows a wide range of finite forms. Just like the matrix finite verbs discussed above, the complement finite verbs include indicative forms, such as, for instance, present perfect indicative (1), (7) and (9), or past indicative (10), as well as modalized forms, such as *should* in (8) and *could* in (11) below.

- (10) As my other love is rugby, I found the World Cup in South Africa superb. I enjoyed watching Scotland's progress, but it was **fitting** that South Africa won for it brought the team, and the entire nation, back into the community of world sport. (CB, times)

- (11) Do you think it was good that the people could campaign or do you <ZF1> th <ZF0> think it didn't do any good anyway or <F02> I think it was **good** that they could but I don't think anybody took a blind bit of notice to be honest. (CB, ukspok)

By way of conclusion, I present the adjectives found in this general non-modal evaluative construction in Table 54. Table 55 details the formal diversity of the matrix and complement finite forms. It will become clear in the next sections that the specific subtypes are more restricted, both lexically and morpho-syntactically.

Table 54. The adjectives occurring in the general type

Adjective	Number of occurrences in the sample	Number of non-modal evaluative uses	Number of general uses			% of general uses	
			<i>that</i>	<i>to</i>	total	relative to sample	relative to NME
<i>appropriate</i>	133	35	4	1	5	3.76	14.29
<i>convenient</i>	33	1	1	0	1	3.03	100.00
<i>fitting</i>	37	31	7	0	7	18.92	22.58
<i>good</i>	200	123	32	17	49	24.50	39.84
<i>important</i>	200	6	3	0	3	1.50	50.00
<i>proper</i>	25	3	1	1	2	8.00	66.67
Total	628	199	48	19	67	10.67	33.67

Table 55. The TAM properties of matrix and *that*-clause finite forms of the general type

Type of finite	Fr	Indicative forms			Modalized forms					
		pres	pres perf	past	<i>can</i>	<i>will</i>	<i>may</i>	<i>could</i>	<i>would</i>	<i>should</i>
matrix	n	42	2	18	1	2	1	-	1	-
(67)	%	62.69	2.99	26.87	1.49	2.99	1.49	-	1.49	-
<i>that</i> -clause	n	18	11	12	1	2	-	1	-	3
(48)	%	37.50	22.92	25.00	2.08	4.17	-	2.08	-	6.25

8.1.3. Specialized use

The semantics of the specialized use has already been discussed in section 6.4.2. In this use, a propositional content is evaluated as fitting or appropriate in view of a particular context, such as historical facts or specific char-

acteristics typical of the participant(s) or the spatio-temporal setting of the SoA referred to in the proposition. Examples are given below.

- (12) John Perrett is a first-order Fairmile enthusiast. ... Perrett's third operational World War II craft is an Harbour Defence Motor Launch HDML 1396, which is used for cruising trips. It is **appropriate** that Fairmiles should be based in this picturesque backwater of the River Dart, since some 16 Fairmile Bs and Ds were built here. (CB, ukmags)

In (12), it is the base location of Fairmiles that is evaluated as appropriate in light of an historical fact: it is the place where several Fairmiles craft have been built. In this case, the speaker explicitly justifies his or her evaluation in the *since*-clause (cf. *because*-clause in [3], section 8.1.1).

- (13) Born in the Wisconsin prairies and spending nearly half of her 99-year life in the desert of New Mexico, O'Keeffe was not scared of space. Even in her seventies she painted the crumpled landscapes of river valleys and mountains as seen from an aeroplane. It's **appropriate**, therefore, that the O'Keeffe retrospective shares the Hayward with the work of another American artist who has a similarly epic view of the landscape. James Turrell doesn't just use the sky as subject matter, he uses it as his medium, too. (CB, ukmags)

In (13), the fact that the O'Keeffe retrospective shares its exhibition location with another artist who has an epic view of the landscape is assessed as appropriate in view of the specific characteristics of O'Keeffe's work described in the preceding discourse. The adverbial *therefore* stresses the link between this context and the assessment. Thus, in this specialized use, the attitudinal source does not really draw on moral principles to make his or her assessment. Instead, the grounds on which the non-modal evaluative assessment is based are linked with contextual information, either explicitly or implicitly. The following example shows that the propositional content itself need not be positive; in such cases, the specialized use has an ironic flavour.

- (14) If scarcely as deplorable as that supporter's conduct, too much of the game itself was compelling only because of its fevered unruliness. Damage was inevitable in so abrasive a fixture and Gough, the Rangers captain, tore calf muscles. ... Attempts at graceful play were rarely tolerated and it was **fitting** that the first goal, after 30

minutes, should stem from an error. Laudrup eased himself away from Miller, Jackson and Mcginlay before flighting a cross straight to Mitchell, the Hibernian left back, who skewed a header into his own net. (CB, times)

This specific subtype of genuine non-modal evaluative meaning shows less variety in lexical items and formal properties than the general type discussed above. The data show that this type is especially frequent with *appropriate* and *fitting*, and only marginal with *important* and *proper*. It is restricted to the copular extraposition construction, and only occurs with affirmative indicative matrix finite forms, either present ones, as in (12) and (13), or, slightly more frequently, past ones, as in (14). The distribution of *that*- and *to*-clauses in this type is clearly skewed towards the first type; only the most frequent adjectives *appropriate* and *fitting* are found with propositional *to*-clauses (each one only once). The example with *fitting* has been given in (39) in section 6.4.2. The example with *appropriate* is given in (15).

- (15) A mother of four children aged from two to 11, she hasn't skipped a business beat because of any of them. Her tall, rangy physique helped her to disguise her pregnancies in efficient-looking business clothes until the last few weeks, and she was breastfeeding Bethany, her youngest, when the baby was five days old, on her way to a meeting with the Equal Opportunities Commission in Manchester "It seemed **appropriate**, somehow, at an EOC meeting, to arrive with nanny and baby in tow," she chuckles.

In this example, the speaker, Jo Cutmore, thinks that her arrival at an Equal Opportunities Commission meeting with a nanny and a baby is appropriate. She does not justify this evaluation explicitly. The hearer needs extralinguistic information on the EOC to infer that justification: the EOC is concerned with sex discrimination, and arrangements concerning maternity leave, for instance, are its core issues.

Like in the case of the general type discussed above, the finite forms of the specialized use *that*-clause complements include both modalized and indicative forms. As shown in Table 57, the examples feature only one type of modalized form, i.e. attitudinal *should*, cf. (12) and (14) (40.74%).

In summary, the specialized use involves non-modal evaluative expressions in which an attitudinal source estimates the degree of appropriateness of a propositional content in view of contextually given information. This

specific meaning goes together with lexical and formal restrictions, which are presented in Tables 56 and 57.

Table 56. The adjectives occurring in the specialized use

Adjective	Number of occurrences in the sample	Number of non-modal evaluative uses	Number of specialized uses			% of specialized uses	
			<i>that</i>	<i>to</i>	total	relative to sample	relative to NME
<i>appropriate</i>	133	35	29	1	30	22.56	85.71
<i>fitting</i>	37	31	23	1	24	64.86	77.42
<i>important</i>	200	6	1	0	1	0.50	16.67
<i>proper</i>	25	3	1	0	1	4.00	33.33
Total	395	75	54	2	56	14.18	74.67

Table 57. The TAM properties of matrix and *that*-clause finite forms of the specialized use

Type of finite	Fr	Indicative forms				Modalized form
		pres	pres perf	past	past perf	<i>should</i>
matrix (56)	n	25	-	31	-	-
	%	44.64	-	55.36	-	-
<i>that</i> -clause (54)	n	9	2	20	1	22
	%	16.67	3.70	37.04	1.85	40.74

8.1.4. Locative use

The locative use is a specific subtype of (genuine) non-modal evaluative construction which involves the attitudinal source, invariably the speaker, assessing his or her, or someone else's spatio-temporal location as good (cf. Van Linden 2010c). In the sample, this locative use is restricted to the adjective *good*. Expressions of spatio-temporal location are taken to include not only true locative phrases ('to be at a particular place'), as in (16),

- (16) I've always had a really good relationship with the Newcastle supporters and it was **good to be up at St James' Park** again. For old times' sake, on my way back from the loo, I bought a tray of pasties and pies and chucked them into the crowd, which got a laugh. (CB, ukmaks)

but also associative expressions ('to be with someone'), as in (17),

- (17) But O'Brien survived it. Some 'friends' couldn't believe I had a by-pass. They said the way I wrote about their team suggested I couldn't have a heart. But I'll let you in on a secret. It's **good to be back amongst my hurling friends** again. (CB, sunnow)

and perception expressions ('to see someone'), as in (18) (rather than to see a particular SoA, see section 8.1.5).

- (18) Many of you, I know, will have attended the first seminar which was held in July of this year – it's **good to see so many of you** here again. Can I extend a very special welcome to those who haven't [sic] been before and are here for the first time. (CB, ukephem)

What characterizes this use and is shared by the three examples above is that the evaluative assessment is simultaneous with the actualization of the SoA referred to in the propositional *to*-complement. It is the very locative meaning that implies this temporal relation of simultaneity. This is fairly straightforward in examples such as (16) and (17). For expressions of perception as in (18), it has been contended that they have a locative component to their meaning as well: there must be some association in terms of spatio-temporal location between the perceiver and the perceived entity (cf. Wierzbicka 1980: 99–114), as in an act of perception, "a stimulus of some kind, e.g. visual, auditory, or tactile, comes in contact with a sense organ of the perceiver" (Foley and Van Valin 1984: 48). In addition to simultaneity, the locative meaning also implies that the understood subject of the *to*-clause has specific reference. In the sample, this subject is always co-referential with the speaker, which is in turn co-referential with the attitudinal source.⁸⁷

87 However, this need not always be the case. In the examples excluded from the sample of 200 instances for *good*, we find locative expressions in which the understood subject of the *to*-clause is not co-referential with the speaker/attitudinal source, but with the referent of the NP in the *for*-PP preceding the *to*-infinitive. In (xi) below, for instance, it is Andreas who will be back in Germany.

- (xi) Germany's manager Berti Vogts is not flavour of the month in Spain after comments about Andreas Brehme's return to the motherland with Kaiserslautern. I think it's great that German clubs are investing money in bringing our stars back to the Bundesliga. It'll be **good** for Andreas to get back to the rhythm of games and training here. (CB, ukmag)

The most important properties that set the locative use apart as a specific type have been mentioned above. In the sample, it is restricted to the adjective *good*, and the formal type of complement is invariably a *to*-infinitive. Furthermore, the pattern is only found in the copular extraposition construction. It does show some variety in the type of matrix finite form, which can be an indicative form (present, present perfect, or past) or the future auxiliary *will*, as illustrated in (19) below.

- (19) Mrs Symonds ... is due to attend the inauguration ceremony in April where her status will be blessed by the tribal chief. ... Her pupils at Old Hall School, Hethersett, who have become pen pals with their counterparts at Wulugu school, are delighted. “It is an honour for me, for the girls and everyone who has been involved in setting up links with the people of Ghana,” Mrs Symonds said. “It will be **good** to see the chief again. When I met him last year he was sitting on a gold stool in his palace. Well, it was a big mud hut propped up with bits of wood, really.” (CB, times)

In (19), the matrix verb *will* indicates that both the evaluation and the seeing event will take place in the future. However, this does not imply that the event is potential: the context makes it clear that the seeing event will certainly happen (Mrs Symonds is ‘due to attend’). The lexical and formal features of the locative pattern are summarized in Tables 58 and 59 below.

Table 58. *Good* occurring in the locative use

Adjective	Number of occurrences in the sample	Number of non-modal evaluative uses	Number of locative uses			% of locative uses	
			<i>that</i>	<i>to</i>	total	relative to sample	relative to NME
<i>good</i>	200	123	0	26	26	13.00	21.14

Table 59. The TAM properties of matrix finite forms of the locative use

Type of finite	Fr	Indicative forms			Modalized form
		pres	pres perf	past	<i>will</i>
matrix (26)	n	16	1	7	2
	%	61.54	3.85	26.92	7.69

The finding that in the sample this locative pattern is typical of *good* is reflected by the results from the multiple distinctive collexeme analysis. Table 60 lists the ten collexemes that are most strongly attracted to the *to*-

infinitive slot of the extraposed *to*-infinitive construction with *good*. Table 61 gives the outcome of the same analysis, with the lexical items collapsed into broad semantic classes of predicates based on Halliday (1994: 106–144). As explained in chapter 7, the smaller the p-value, the stronger the collocation strength.

Table 60. The collexemes most strongly attracted to the *to*-infinitive slot of the extraposed *to*-infinitive construction with *good*

Collexeme	Obs. Freq. in A	Obs. Freq. in B	Distinc- tive for:	Fisher Yates p-value	Bonferroni cor- rection
see	65	20	A	3.95E-45	8.69E-44
be_locative	21	6	A	4.34E-15	9.54E-14
know	29	48	A	4.10E-09	9.01E-08
talk	14	18	A	6.70E-06	1.48E-04
hear	6	1	A	1.91E-05	4.20E-04
meet	4	2	A	2.61E-03	5.73E-02
stretch	2	0	A	1.47E-02	3.23E-01
get_back	2	0	A	1.47E-02	3.23E-01
get_possession	10	29	A	1.49E-02	3.28E-01
be_noun	6	12	A	1.58E-02	3.47E-01

Table 61. The predicate classes attracted to the *to*-infinitive slot of the extraposed *to*-infinitive construction with *good*

Collexeme: predicate classes	Obs. Freq. in A	Obs. Freq. in B	Distinc- tive for:	Fisher Yates p-value	Bonferroni correction
perception	73	20	A	1.99E-52	4.37E-51
location	21	22	A	2.47E-09	5.42E-08
affection	4	18	A	2.73E-01	6.01E+00
intensive	14	87	A	3.37E-01	7.42E+00

Table 60 indicates that the verbs attracted most strongly to the extraposition construction with *good* (i.e. A in the tables) are *see* ($p=3.95E-45$) and *be* followed by a locative or associative expression ($p=4.34E-15$). The top ten also includes the verb *meet*, which often features in the locative pattern as well ($p=2.61E-03$). Importantly, the frequencies of *see*, *be-locative* and *meet* are significantly higher than what would be expected on a chance level (with $\alpha=0.05$ as the standard level of significance, cf. Stefanowitsch and Gries 2003: 239, note 6). Table 60 also indicates that the results for *see* and *be-locative* remain statistically significant after the Bonferroni correction (see chapter 7). Table 61 shows similar results for the predicate classes:

only the frequencies of perception and location are significant, even at corrected level. Thus, compared to the other 21 adjectives included in the multiple distinctive collexeme analysis, *good* stands out as favouring perception and locative predicates in the extraposed *to*-complement construction. However, it should be noted that not all examples of the verb *see* (and the perception predicate) are instances of the locative pattern. In the next section it will become clear that *see* is also used in the knowledge/acquisition of knowledge pattern.

8.1.5. Knowledge/acquisition of knowledge use

The final subtype of (genuine) non-modal evaluative meaning is concerned with the positive evaluation of knowing or getting to know a particular propositional content (knowledge or acquisition of knowledge, henceforth KAK, cf. Noonan 2007: 129–130) (see also Van linden 2010c). Among the three subtypes of non-modal evaluative meaning, this use comes closest to being a ‘construction’ in the Construction Grammar sense, specifically in the account developed by Goldberg (1995, 1996):

A construction is ... a pairing of form with meaning/use such that some aspect of the form or some aspect of the meaning/use is not strictly predictable from the component parts or from other constructions already established to exist in the language. (Goldberg 1996: 68)

The KAK pattern is attested with two adjectives in the sample: it is very frequent with *good*, and it is found only once with *important*, cf. Table 62 below. (This distribution can be explained diachronically, see Van linden [2010c] for more details.)⁸⁸ Consider the following examples.

88 The emergence of the KAK pattern with *important* is a recent development. In Van linden (2010c) I show that the first KAK uses with *good* appear in the Late Modern English period, unlike the locative pattern, which is found as of Old English. By Present-day English, KAK uses with *good* have gained in frequency significantly (so as to become more frequent than locative uses, cf. Tables 58 and 62). The KAK example with *important*, however, is diachronically the first one. Moreover, this KAK use is not the only specific subtype of non-modal evaluative meaning that *important* is developing in Present-day English. In section 6.4.2, it has been argued that it has taken over the specialized use as well, albeit not from *good* in that case.

- (20) We both started a Money Minder plan as we can enjoy an even bigger payment in 10 years time. In the meantime, it's **good to know** we are covered in case anything should happen to us. (CB, ukephem)
- (21) Christian faith and worship had been resurrected and emerged stronger than ever. It is **good to read** that this is being sustained, and we could imagine ourselves sharing this wonderful Eastertide in Wenzhou. (CB, times)
- (22) Easter Sunday was lovely and warm. ... I had a rest on the bed in the afternoon but our four children went out in the garden and played croquet with much merriment. It was **good to hear** them all laughing together, just like old times. (CB, ukephem)
- (23) It is **important to see** UK base financial markets on a world basis following the recent spread of "global" or "round the clock" trading from foreign exchange to securities, financial futures and commodities. (CB, ukephem)

The examples above all share the following constructional make-up: they have a copular matrix and an extraposed *to*-infinitival subject clause consisting of a KAK predicate and a secondary propositional complement. Note that the non-deliberate perception verbs *see* and *hear* taking participial complements are ranged here with KAK predicates (even if they are typically regarded as expressing immediate perception, cf. Noonan 2007: 142–144), as sensory perception essentially implies acquisition of knowledge. What is special to the KAK use is that it is not so much the SoA referred to by the *to*-clause that is evaluated as good or important. Instead, the construction as a whole expresses the speaker's positive evaluation of the propositional content of the secondary complement. A comparable pattern has been noted by Mair (1990: 25) with matrix predicates assessing truth and probability, such as *be true*, *obvious* and *probable*. These matrices typically take propositional *that*-clause complements, but they are also found in constructions with extraposed *to*-clauses containing utterance or propositional attitude predicates (e.g. *say* or *believe*) and secondary *that*-complements, as in (24) below.

- (24) "I often think", Treece said rather smugly, "that it's equally **true to say** that genius is an infinite capacity for faking pains." (W.16.2.107-1) (Mair 1990: 25 [23])

In this example, it is not the act of saying that is equally true, but the propositional content of the secondary *that*-clause (see also Herriman 2000:

591). This is why Mair regards this construction as “slightly incongruous” (1990: 25). In both the KAK and in Mair’s pattern, it is this incongruity that makes the meaning of the whole construction unpredictable from its constituent parts.

However, it should be noted that the comparison falls short in one respect. In Mair’s (1990) case, *to*-clauses such as the one in (24) will always take part in the larger construction and they will retain this incongruous feel. Interestingly, this is not the case for the *to*-clauses of the predicates occurring in the KAK pattern. The following examples with *to*-clauses containing KAK predicates are mandative rather than propositional in nature, and thus instantiate deontic rather than non-modal evaluative expressions. What is distinctive of these examples is that the implied infinitival subjects have arbitrary reference, whereas those in the KAK pattern have specific reference: they are co-referential with the speaker (cf. [20] to [23]), just like those in the locative pattern (see section 8.1.4).

- (25) But she what she didn’t like was that the Christian festival which was important to her had been ignored <F01> Mm <F02> Not that her daughter learnt about other festivals ‘cos it’s **good** to know about everyone else’s religion and beliefs and surely that would help ... racial understanding in the area <F01> (CB, ukspok)
- (26) In understanding hysterical reactions it is **important** to know that it is the unconscious mind which is overriding the individual’s conscious decision-making process, and will almost certainly be doing so for good reasons psychologically – thus hysteria is not, nor should be, a dismissive diagnosis. (CB, ukbooks)

In addition to specific reference of its infinitival subjects, the KAK pattern has some further properties in common with the locative pattern. Notably, the KAK construction also involves simultaneity of evaluative assessment and actualization of the SoA referred to in the *to*-complement. This characteristic can be explained by the presence of a locative element in the KAK pattern as well. Some functional accounts, for example, have argued that the semantics of KAK predicates includes a locative component, albeit indirectly: in the first place their meaning includes a possessive component, which in turn implies locative meaning (Wierzbicka 1980: 105–114; Foley and Van Valin 1984: 49). However, in cases like (27) below, the actualization of the KAK *to*-complement must be interpreted as being both anterior to and simultaneous with the evaluative assessment in the moment of speech.

- (27) Tracker funds are the cheapest and most straightforward of all equity investments. ... They gained prominence last year when Virgin rocked the market with the launch of its low-cost index-tracking Pep, which is sold over the phone in the same way as Direct Line already sells insurance. Virgin said: “It is **good to see** another company with a good reputation coming into the market and showing that simple, low-cost products are the way the industry must go. As well as low charges, tracker funds also have investment performance on their side.” (CB, times)

The seeing-event evaluated as good in (27) arguably comprises a range of successive seeing-events in a time span that started before and continues into the moment of assessment. In other words, the secondary propositional complement does not refer to an event that can be seen at a single glance (coming into the market with low-cost products, and gaining profits from this business). This finding suggests that in the KAK construction the meaning of the predicate *see* has become somewhat specialized. Similar observations have been made regarding the use of *to see* in other types of constructions (De Smet and Cuyckens 2007). Examples of such environments are given below.

- (28) With what reluctance the emperor of Germany would **consent to see** troops placed in the provinces bordering upon his dominions ... (CLMETEV 1740–1741 Johnson, *Parliamentary Debates*)
- (29) M Puel repeated his invitation to Dasa, a Daimler-Benz subsidiary, to become a partner in AIR. Although he was **sorry to see** Fokker had sought protection from creditors and a buyer was being sought, he believed that the removal of surplus capacity would help the market. (CB, times)
- (30) Still, ... it is not pleasant to see a whole room full of grown-ups ... forced to shout their words over the din of one self-willed child, or to suspend their conversation until the brat chooses to stop its noise. It is kind of them to sacrifice their comfort rather than stop the child’s enjoyment, but I am very sure that it is mistaken kindness. Then I do not like being pawed with jammy hands; I **hate to see** animals mauled about like stuffed. (CB, ukbooks)

In these examples, the verb *see* does not refer to an actual seeing event either. De Smet and Cuyckens (2007) argue that *to see* serves to introduce a secondary complement and thus can be compared to a complementizer; in these specific cases the *to see*-construction may be used to avoid raising.

However, as in the KAK construction studied here *to see* is used as a paradigmatic variant of another perception verb (*to hear*) and KAK predicates (*to read, to know*), which are often followed by secondary *that*-clauses with overt *that*, we cannot conclude that *to see* has a complementizer-like use in, for example, (27). Nevertheless, examples such as (28) to (30) corroborate the finding that in some constructions *see* loses the implication of an actual seeing event. More generally, they confirm that *to*-clauses introducing secondary complements may have a schematic rather than a lexically full meaning, as the most important information is packaged in this secondary complement (see also section 8.3.3).

Just like the two other subtypes of non-modal evaluative meaning, the KAK construction shows less variety in formal properties than the general type. As mentioned above, it is restricted to copular constructions with extraposed *to*-clauses (like the locative pattern). The matrix finite verbs invariably have positive polarity and they are much more frequently present than past indicative forms. The formal and lexical properties of the KAK pattern are detailed in Tables 62 and 63.

Table 62. The adjectives occurring in the KAK use

Adjective	Number of occurrences in the sample	Number of non-modal evaluative uses	Number of KAK uses			% of KAK uses	
			<i>that</i>	<i>to</i>	total	relative to sample	relative to NME
<i>good</i>	200	123	0	48	48	24.00	39.02
<i>important</i>	200	6	0	1	1	0.50	16.67
total	400	129	0	49	49	12.25	37.98

Table 63. The TAM properties of matrix finite forms of the KAK use

Type of finite	Fr	Indicative forms	
		pres	past
matrix (49)	n	41	8
	%	83.67	16.33

It is clear from Table 62 that the KAK pattern accounts for a large share of the non-modal evaluative uses of *good* (39%), whereas it far less frequent with *important*. This observation is substantiated by the results of the multiple distinctive collexeme analysis. Table 64 not only shows the ten collexemes most strongly attracted to the *to*-infinitive slot of the extraposed *to*-clause construction with *good* (cf. Table 60), but also the ten collexemes most strongly repelled by it. Table 65 does so for the predicate classes (ten in total) (cf. Table 61). Unlike Table 61, however, Table 65 distinguishes

between perception predicates complemented by a secondary proposition (perception_comp) and those without clausal complement (perception [proper]), so as to give some idea about the ratio of locative versus KAK uses (see section 8.1.4).

Table 64. The collexemes most strongly attracted to and repelled by the *to*-infinitive slot of the extraposed *to*-infinitive construction with *good*

Distinctive for A (attracted)					Distinctive for B (repelled)				
Collexeme	Obs. Freq.	Obs. Freq.	Fisher Yates p-value	Bonferroni correction	Collexeme	Obs. Freq.	Obs. Freq.	Fisher Yates p-value	Bonferroni correction
	in A	in B				in A	in B		
see	65	20	3.95E-45	8.69E-44	remember	1	51	0.00927	2.04E-01
be_locative	21	6	4.34E-15	9.54E-14	try	0	29	0.0230	5.05E-01
know	29	48	4.10E-09	9.01E-08	ensure	0	29	0.0230	5.05E-01
talk	14	18	6.70E-06	1.48E-04	understand	0	28	0.0262	5.76E-01
hear	6	1	1.91E-05	4.20E-04	look	0	24	0.0442	9.71E-01
meet	4	2	0.00261	5.73E-02	keep_cont.	1	35	0.0555	1.22E+00
stretch	2	0	0.0147	3.23E-01	say	0	22	0.0573	1.26E+00
get_back	2	0	0.0147	3.23E-01	have	6	84	0.0654	1.44E+00
get_possession	10	29	0.0149	3.28E-01	recognize	0	19	0.0848	1.87E+00
be_noun	6	12	0.0158	3.47E-01	consider	0	19	0.0848	1.87E+00

Table 65. The predicate classes attracted to and repelled by the *to*-infinitive slot of the extraposed *to*-infinitive construction with *good*

Distinctive for A (attracted)					Distinctive for B (repelled)				
Collexeme: predicate classes	Obs. Freq.	Obs. Freq.	Fisher Yates p-value	Bonferroni correction	Collexeme: predicate classes	Obs. Freq.	Obs. Freq.	Fisher Yates p-value	Bonferroni correction
	in A	in B				in A	in B		
perception	43	17	1.20E-27	2.64E-26	cognition	45	651	6.43E-09	1.41E-07
perception_comp	30	3	3.04E-25	6.70E-24	material	102	962	0.000304	6.69E-03
location	21	22	2.47E-09	5.42E-08	utterance	4	98	0.00339	7.45E-02
affection	4	18	0.273	6.01E+00	possession	15	151	0.124	2.73E+00
intensive	14	87	0.337	7.42E+00	existential	0	4	0.596	1.31E+01
					behavioural	0	1	0.879	1.93E+01

Table 64 shows that the KAK predicates rank high in the list of attracted collexemes (*see*, *know*, *hear*). It is also significant that the cognition/knowledge verb *know* is a strongly attracted item, whereas the cognition verbs *remember*, *understand*, *recognize* and *consider* are strongly repelled items (however, not at corrected level). The observation for these four verbs explains why the category of cognition verbs ends up as a strongly repelled predicate class in Table 65, in spite of the result for *know*. This table also indicates that both the category of perception proper and that of perception with clausal complement are strongly attracted; the first

one two orders of magnitude more so than the second one. It should be noted, though, that the first category still covers examples of the KAK pattern, for instance those which express the perceived SoA as an action nominal rather than as a clausal complement, as in (31).

- (31) This broad-mindedness extends to the CAS’s willingness to show its crafts collection alongside its fine art. It was **good** to see the bafflement of fine art specialists confronted with, say, Caroline Broadhead’s explorations of the idea that clothes construct and confine their wearers’ identities long anticipated the supposedly avant-garde sculptures of Jana Sterbak. (CB, times)

In general, the collostructional analysis thus provides additional evidence for considering the KAK pattern as a partially filled construction with a restricted number of lexical elements patterning in two of the six slots (in boxes), as visualized in Figure 19.

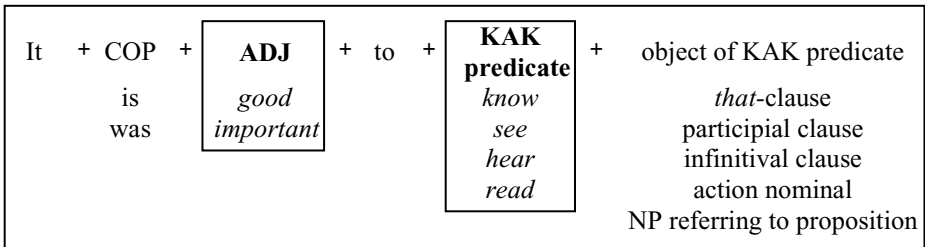


Figure 19. The KAK pattern as a partially filled construction

8.1.6. Conclusion

This section has focused on various types of non-modal evaluative meaning and it has proposed a basic distinction between a minor type of mental focus expressions, which clearly have a specific pragmatic value, and a major type of genuine non-modal evaluative uses, in which an attitudinal source expresses his or her evaluation of a propositional content. This conceptual distinction appeared to be semantically determined, as the mental focus type is only found with importance adjectives (weak *important*, and strong *crucial* and *essential*), whereas the genuine non-modal evaluative type is found with many more adjectives, crucially all weak ones, as summarized in Table 66.

Table 66. The types of non-modal evaluative meaning and the adjectives expressing them

Adjective	mental focus use	genuine non-modal evaluative uses			
		general use	specialized use	locative use	KAK use
<i>appropriate</i>	-	+	+	-	-
<i>fitting</i>	-	+	+	-	-
<i>proper</i>	-	+	+	-	-
<i>convenient</i>	-	+	-	-	-
<i>good</i>	-	+	-	+	+
<i>important</i>	+	+	+	-	+
<i>crucial</i>	+	-	-	-	-
<i>essential</i>	+	-	-	-	-

Table 67. The TAM properties of matrix finite forms in the types of non-modal evaluative expressions

Type of matrix finite	Fr	total	Indicative forms			Modalized forms			
			pres	pres perf	past	<i>can</i>	<i>will</i>	<i>may</i>	<i>would</i>
mental focus	n	4	4	-	-	-	-	-	-
general use	%	100.00	100.00	-	-	-	-	-	-
specialized use	n	67	42	2	18	1	2	1	1
locative use	%	100.00	62.69	2.99	26.87	1.49	2.99	1.49	1.49
KAK use	n	56	25	-	31	-	-	-	-
	%	100.00	44.64	-	55.36	-	-	-	-
	n	26	16	1	7	-	2	-	-
	%	100.00	61.54	3.85	26.92	-	7.69	-	-
	n	49	41	-	8	-	-	-	-
	%	100.00	83.67	-	16.33	-	-	-	-

Importantly, this section has concentrated not only on conceptual, but also on formal distinctions. It was shown that the mental focus use shares many properties with the mandative-propositional construction (see section 6.4.1). The genuine non-modal evaluative category, by contrast, is much more varied. We distinguished three more specific subtypes, i.e. the specialized, locative and KAK use, which are each restricted to a subset of weak adjectives and which combine particular semantic characteristics with certain formal properties in such a way that we can call them constructions (in the Goldberian Construction Grammar sense) to an increasing degree. Especially the KAK pattern was argued to be a true – partially filled – construction, whose meaning is not fully predictable from the component parts. Tables 67 and 68 show that both the matrix and *that*-clause finite forms (if

applicable) are less diverse in the three subtypes and the mental focus use compared to the general non-modal evaluative use. The discussions above lead us to conclude that the internal organization of the non-modal evaluative domain can be represented graphically as in Figure 20. In the following sections, it will become clear that this organization differs from those of deontic and dynamic modality, the two other categories on the vertical axis of the conceptual map.

Table 68. The TAM properties of *that*-clause finite forms in the types of non-modal evaluative expressions

Type of <i>that</i> -clause finite	F	total	Indicative forms				Modalized forms			
			pres	pres perf	past	past perf	<i>can</i>	<i>will</i>	<i>could</i>	<i>should</i>
mental focus	n	4	4	-	-	-	-	-	-	-
	%	100.00	100.00	-	-	-	-	-	-	-
general use	n	48	18	11	12	-	1	2	1	3
	%	100.00	37.50	22.92	25.00	-	2.08	4.17	2.08	6.25
specialized use	n	54	9	2	20	1	-	-	-	22
	%	100.00	16.67	3.70	37.04	1.85	-	-	-	40.74

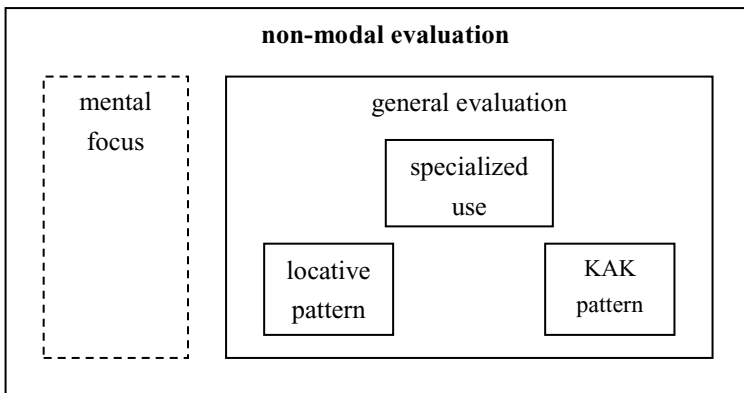


Figure 20. The internal organization of the non-modal evaluative domain

As the locative and KAK pattern in Figure 20 are mainly represented by one and the same adjective in the sample, i.e. *good*, it is useful to see whether these patterns are also found with different sets of adjectives. Searches in the COBUILD corpus show that this is the case. Interestingly, the adjectives found are generally taken to express only evaluative mean-

ing, that is, unlike the adjectives studied here, they do not occur in both non-modal evaluative and deontic expressions. Examples are given below.

- (32) <F01/> Oh it's **nice** to be here. <M01/> I <ZGY/> were n't going to come or something. ... So have you had a good day today? ... <M01/> I've had a hard day. (WB, brspok)
- (33) Daniel clapped his hands and the chatter died away as they turned expectantly towards him. The tall American moved to his side. "Hello, everyone, it's **great** to see you again. I'd like to introduce you to Brad Lubekker here." (WB, brbooks)
- (34) He stretched out his hand to her. She took it hesitantly. He pulled her towards him. "It's very **nice** to see you," he said. He was looking up at her as if she were an apparition. (WB, brbooks)

Examples (32) to (34) with *nice* and *great* exemplify the locative pattern. These constructions all have anticipatory *it* and a copular finite. However, the locative pattern is also often found without these elements, e.g., *nice to meet you*, or *good to see you* (not included in the analyses here). Arguably, these locative constructions have become semi-formulaic phrases typically used in face-to-face communication. The examples (32) to (34) also suggest that the locative pattern is restricted to adjectives expressing degrees of likeability (cf. Nuyts [2006: 12]: "the degree of the speaker's (or someone else's) liking or disliking of the state of affairs", see section 1.3.4). We might thus assume that in the locative pattern *good* has come to express likeability rather than moral evaluation, and that the locative pattern can be thought of as a partially filled construction, just like the KAK pattern, in which a specific constructional make-up is paired with a particular meaning that cannot be compositionally derived.⁸⁹ The locative construction can be represented as in Figure 21.

89 The semantic difference between moral evaluation and likeability might be considered too minimal to speak of non-compositionality in the case of the locative pattern. In any case, in later work Goldberg relaxes her emphasis on non-compositionality as an essential property of constructions, adding that "patterns are stored as constructions even if they are fully predictable as long as they occur with sufficient frequency" (2006: 5). We could argue that the locative pattern is currently at least frequent enough to grant it the status of partially filled construction.

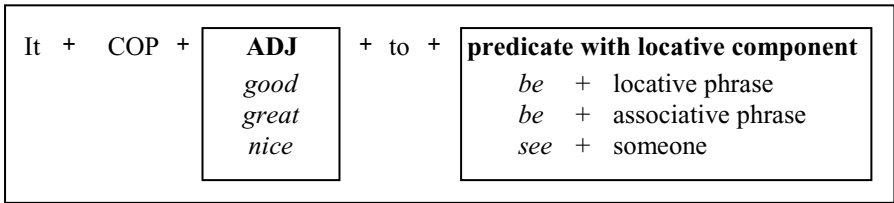


Figure 21. The locative pattern as a partially filled construction

- (35) He wanted the British Forces to have a firm base inside Bosnia itself, rather than setting up outside its borders and sending patrols into the country. It was also very **heartening** to hear that the United States had offered a strategic airlift to get us positioned in the Balkans. (WB, brbooks)
- (36) CAMPBELL: That is the Casimir effect. And in fact it's quite **interesting** to know that it was first predicted because Casimir was asked to look into what sort of forces can exist between particles, because the known forces at the time that he was asked this back in the 40s, could not account for the stability of paint. (WB, brspok)
- (37) At one of the tables, we ordered some drinks and avoided all talk of Bosnia. It was **great** to see Richard and RSM Stevens relaxing a little – even if we were all still in uniform and had our weapons with us. (WB, brbooks)
- (38) MELISSA: I'd like to show that boy who raped me that he might have broken my body but he did n't destroy my soul. He could n't break that! A woman who has joined in the laughter but has not spoken until this moment responds: KYRA: It's **wonderful** to hear you sounding so strong. (WB, brbooks)
- (39) You see, so far all the political processes have been blocked by the veto of the Khmer Rouge. That's why they have tried always to delay negotiations so that they can wage a longer civil warfare in which they hope that one day they could overthrow our government by military means. NARR: It is not **surprising** to hear Cham Prasidh castigate the Khmer Rouge. (WB, brspok)

Examples (35) to (39) above instantiate the KAK pattern with the adjectives (or participles) *heartening*, *interesting*, *great*, *wonderful*, and *surprising*. The KAK predicates include *hear*, *know* and *see*, and the secondary propositional complements are *that*-clauses in (35) and (36), participial clauses in (37) and (38), and a (bare) infinitival clause in (39). The examples show that the types of evaluative meaning expressed by KAK con-

structions include not only likeability but also, for instance, expectability and significance. This finding may account for the fact that *important* is found in this pattern, but not in the locative pattern. It also suggests that in this construction *good* has kept its general moral undertone, more so than in the locative pattern. More generally, the examples with purely evaluative adjectives support establishing the locative and KAK use found with *good* (and *important*) as true patterns or constructions, which are (getting) entrenched in the language (cf. Hopper's [1987, 1998] Emergent Grammar).

8.2. Bridging contexts

With the notion of bridging contexts being extended to constructions, the present section is concerned with contexts bridging non-modal evaluative and deontic meaning (cf. Evans and Wilkins 2000: 550; see also section 6.2.2). I have shown that such contexts have diachronic relevance: it is through bridging contexts that weak adjectives originally patterning with mandative complements came to be associated with propositional ones (see section 6.4.2). Like the historical examples, the Present-day English instances all involve SoAs with an ambivalent factuality status: they typically have already been actualized at the moment of assessment, but at the same time (the contexts of) these constructions suggest that it is desirable that they are also actualized in the future.

The data show that SoAs with an ambivalent factuality status can be expressed by both *that*-clauses and *to*-clauses. The first type of complement typically has the form *should* as finite form, which is ambiguous between a mandative reading and an attitudinal reading (cf. Huddleston and Pullum 2002: 995, 1001), as in (40). A bridging *that*-clause can also have a present indicative finite verb, as in (41).

- (40) “Here in this Capital, several weeks ago, a group with the bandoliers of ammunition and the weapons marched into this Capital and into the legislative halls, and it’s a little shocking to Americans, even though we have quite a violent history revolution is in the air.” “But in a country where everyone realised there might be riots or violence or whatever, guns were still very easily available, weren’t they?” “Yes,” said Reagan. “Although I’m not one who believes in overdoing the restriction on that, because the wrong person can always get the gun, so perhaps it’s **proper** that the right person should have them at least available.” (CB, ukbooks)

In (40), the speaker, president Reagan, thinks that it is proper that ‘right’ persons also should have guns available. At the moment of speech, the policy on the possession of weapons was fairly liberal, so it was the case that guns were easily available for ‘right’ persons. This fact justifies a non-modal evaluative reading, with *should* used in its attitudinal sense. At the same time, Reagan’s judgement can also be read as a plea for a continued liberal policy on the possession of arms. In that reading, *should* has mandative meaning.

- (41) Birthright is often thought to be concerned only with newborn babies, but Rosie stresses that it deals with many aspects of pregnancy, fertility and women’s health. ... These days, Rosie finds life more relaxing than during her time as an MP, but she remains the diplomatic politician; when asked why such vital research isn’t funded by the Department of Health, she says “The Government should be doing as much as it can, but it has limited funds. I think it’s **important** that work like ours is funded by medical charities such as Birthright.” (CB, ukmags)

In (41), the speaker, Rosie Barnes, thinks it is important that work like that of Birthright is funded by charity rather than by the government. Again, the context shows that this is the case at the moment of speech, which allows for a non-modal evaluative reading. As in (40), however, the assessment of the speaker can also be interpreted to apply in general (i.e., the SoA referred to in the *that*-clause should continue to be actualized), which implies a deontic reading of the construction. The examples thus show that in *that*-clauses both *should* and present indicative finite forms allow for an ambivalent interpretation of the factuality status of the SoA referred to in the complement.

In the data, bridging contexts construed with *to*-clauses show three different ways in which they support both a deontic and a non-modal evaluative reading. One type of bridging expression involves the special context of a counterfactual construction with a perfect *to*-infinitive like in (42), which is very similar to the hypothetical constructions discussed in section 6.4.2 (examples [31] and [32]).

- (42) As reunions go, the get-together today in Kensington, which honours England’s cricketer of the year, sounds pretty grim. The team’s performance this winter was so tame, and its manner so unappealing, that the organisers will be doing well to get a smile out of them. ... Given the absurd ‘noises off’, when the appointment of

the chairman of selectors and the selection panel itself has been reduced to low comedy, it might have been more **appropriate** to have hired the Whitehall Theatre for the function this morning, and invited Ray Cooney to present the gong, preferably after entering through a bedroom window. (CB, times)

The construction in (42) can be understood as evaluating the hypothetical anterior SoA referred to in the *to*-clause, i.e. having hired the Whitehall Theatre. However, the expression also has an element of potentiality to it: it can be paraphrased as ‘it was more appropriate to hire the Whitehall Theatre for the reunion, but it did not happen’, with the first part expressing deontic meaning.

A second type is characterized by the fact that the understood subject of the *to*-infinitive can be interpreted to have specific as well as arbitrary reference. An example is given in (43).

- (43) Bjork admits that, in a perverse way, Iceland’s stubborn insularity helped her define her individuality. In small villages, the pressure for normality is so great. ... I still remember the moment when I was five or something, when I just said, “Listen, Bjork, either you do things their way, or you do things your way. And it’ll be a lot more fun if you do it your way.” I think it’s **good** to be brought up that way, because you have to fight: F ING HELL, I’M GONNA WEAR PINK FUR THIS WEEK AND F YOU. (CB, ukmags)

In (43), the *to*-clause *to be brought up that way* can be interpreted as applying to the speaker, the Icelandic singer Bjork. She has been brought up that way, as can be inferred from the context, and she evaluates that fact as good. However, the *to*-clause can also be understood as applying in general or to any person, in which case the infinitival subject has arbitrary reference and the SoA referred to in the *to*-clause becomes potential. In that case, the construction has a deontic meaning.

The third type of bridging expression is illustrated in (44). This example contains a *for...to*-infinitive construction, with the *for*-NP expressing the understood subject of the *to*-infinitive.

- (44) AUSTRALIAN premier Paul Keating has defended the pro-republican speech he gave to the Queen. He said: “When the prime minister addresses the Queen he addresses her as the Queen of Australia and it’s entirely **appropriate** for him to articulate independent Australian attitudes.” (CB, today)

More generally, the third type involves *to*-clauses whose understood subjects have specific reference, whether or not preceded by a *for*-NP. Like in the case of the *that*-clauses discussed above, it is clear from the context that the SoA referred to in the complement has already taken place at the moment of assessment: in (44), Paul Keating has articulated independent Australian attitudes in his pro-republican speech. At the same time, however, the *to*-infinitive also has a potential flavour: in general it is desirable that the prime minister articulate such attitudes. In short, constructions with *to*-clauses can form bridging contexts for three reasons, or *to*-clauses can have an ambivalent factuality status in three ways. In the case of perfect *to*-infinitives, the hypothetical or counterfactual nature of the construction as a whole implies both a deontic and a non-modal evaluative aspect. With 'plain' *to*-infinitives, there are two possibilities. Either the context allows that the *to*-infinitive can be interpreted as applying to a specific (implied) subject (in which case the action has been actualized) as well as to any subject (in which case the action is potential), or the *to*-clause can only be understood as applying to a specific (implied) subject, but according to the context the SoA referred to in it can be interpreted both as already actualized and as still potential.

In view of their diachronic functionality mentioned above, it can be expected that the set of Present-day English bridging contexts includes only weak adjectives, such as in the examples given so far. However, there is one exception in the sample, given in (45).

- (45) Rey is a serious chronicler and teacher of African history and culture, for which we should be grateful, as so little of our cultures and histories are taught in educational establishments. It is refreshing and **vital** that work such as Rey's is supported and documented.
(CB, ukmags)

It can be noted that in (45) the strong adjective *vital* is coordinated with *refreshing*. It is especially this last adjective that gives a non-modal evaluative flavour to the example, since, when construed with a clausal complement, it can express only this type of meaning and never deontic meaning. In other words, it is because of the presence of this adjective that we know that work such as Rey's is actually supported and documented. The fact that *vital* is used in coordination with this adjective, on the one hand, suggests that its meaning is at least compatible with non-modal evaluative meaning. On the other, *vital* seems to add the meaning that it is also very important that work like Rey's continues to be supported and documented, and it thus adds a deontic component to the meaning of the construction as

a whole. As it can be questioned whether the same construction without *refreshing* would have a non-modal evaluative component to it, I do not consider this expression to form a true counterexample to the restriction of bridging contexts to weak adjectives.

In conclusion, in this book bridging contexts are constructions which can have both a non-modal evaluative and a deontic reading, as their complements can be interpreted as having an ambivalent factuality status. Table 69 details which adjectives are found in bridging contexts, and with which formal types of complement they pattern. It shows that the overall frequency of bridging contexts is fairly low in the sample (2.86%). Table 70 presents the formal properties of the matrix and *that*-clause finite verbs. As indicated above, *that*-clauses have only *should* or present indicative forms.

Table 69. The adjectives occurring in bridging contexts

Adjective	Number of occurrences in the sample	Number of bridging contexts			% of bridging contexts relative to sample
		<i>that</i>	<i>to</i>	total	
<i>appropriate</i>	133	6	2	8	6.02
<i>fitting</i>	37	1	0	1	2.70
<i>good</i>	200	1	2	3	1.50
<i>important</i>	200	1	0	1	0.50
<i>proper</i>	25	2	2	4	16.00
<i>(vital)</i>	(200)	(1)	0	(1)	0.50
Total	595 (795)	11 (12)	6 (6)	17 (18)	2.86 (2.26)

Table 70. The TAM properties of matrix and *that*-clause finite forms of bridging contexts

Type of finite	Fr	Indicative forms		Modalized form	
		pres	past	<i>should</i>	<i>might</i>
matrix (18)	n	14	3	-	1
	%	77.78	16.67	-	5.56
<i>that</i> -clause (12)	n	2	-	10	-
	%	16.67	-	83.33	-

8.3. Deontic and dynamic modality

This section deals with the two modal types of qualificational categories in the conceptual map, i.e. deontic and dynamic meaning. The fact that these categories are treated in the same section is significant: it will be argued

that the delineation between deontic and dynamic meaning is more problematic than has been acknowledged in the literature (e.g. von Wright 1951b: 28, 36; Goossens 1985: 204; Palmer 2001: 9–10; Nuyts 2005, 2006), since quite a few expressions with strong adjectives can in principle be assigned to either type. However, it will also be argued that the problems in assigning these do not question the validity of the two categories. Rather, they are predicted by the diachronic analysis of the strong adjectives proposed in chapter 4. Before concentrating on this line of argument, I will first take a look at both weak and strong adjectives expressing deontic meaning. I will make a case that expressions of desirability can function on two distinct levels, either relating to the real world (SoA-related), or relating to the speaker's argumentative goals (speaker-related) (cf. Van Linden 2010d), as has been observed for other linguistic phenomena, such as inter-clausal relations (e.g., Davies 1979: 146–176; Sweetser 1990: 76–112; Verstraete 2007: ch. 9). In section 8.4 it will be shown that directive expressions can function on these two levels as well. In general the discussions in this section will confirm that the conceptual hierarchies of weak and strong adjectives presented in section 6.6 also hold in Present-day English.

8.3.1. SoA-related and speaker-related deontic uses

Most of the deontic examples in the sample – with weak or strong adjectives – express the desirability for someone to carry out a particular SoA in the real world, as in, for instance, (46).

- (46) “Salvadoreans generally take great pride in their personal hygiene.”
 “But there’s no privacy here,” Nicole said, gesturing towards the window. “There are people walking past the house all the time.”
 “... Believe me, nobody will even give you a second glance. But it’s **essential** that you follow their customs when you bathe, otherwise you’ll offend them.” (CB, ukbooks)

In (46) the SoA that is assessed as desirable clearly relates to the outside world: following (Salvadorean) bathing customs is something that can only be carried out in the extra-linguistic world. However, the sample also includes a number of expressions which are not so much oriented towards the extralinguistic world, but which are rather used to structure a stretch of discourse, as in (48) below, to build an argument, or to focus the hearer's attention onto a certain proposition. I will use the term ‘SoA-related use’ to

refer to the first type of uses, and ‘speaker-related use’ to refer to the second type (cf. Verstraete 2007: ch. 9).

- (47) Therefore missionary translations appealed to the very roots of these societies, touching the springs of life and imagination in real, enduring ways. Perhaps it was to this phenomenon that Pliny the Younger referred in his letter to the Emperor Trajan, namely, that Christian renewal also transforms while stimulating older habits and attitudes. Whatever the case, it would be **appropriate** to conclude this section of our discussion with a closer clarification of the vernacular issue in Christian missionary translation, and do this in two interconnected stages. (CB, ukbooks)

Example (47) differs from (46) in that the SoA assessed as desirable relates to text structure and the deontic expression as a whole serves the speaker’s argumentative goals. It is used to signal that the speaker has completed the body of the text and now moves on to the conclusion. The speaker also spe-

Table 71. The frequency of SoA-related and speaker-related deontic uses

Adjective	Number of occurrences in the sample	Number of deontic uses	Types of deontic uses		% of deontic uses	
			SoA-related	speaker-related	SoA-related	speaker-related
<i>appropriate</i>	133	90	82	8	91.11	8.89
<i>convenient</i>	33	32	31	1	96.88	3.13
<i>desirable</i>	31	31	31	0	100.00	-
<i>expedient</i>	8	8	8	0	100.00	-
<i>fit</i>	49	49	48	1	97.96	2.04
<i>fitting</i>	37	5	5	0	100.00	-
<i>good</i>	200	74	72	2	97.30	2.70
<i>important</i>	200	193	170	23	88.08	11.92
<i>profitable</i>	7	7	7	0	100.00	-
<i>proper</i>	25	18	17	1	94.44	5.56
<i>suitable</i>	5	5	5	0	100.00	-
<i>critical</i>	12	10	10	0	100.00	-
<i>crucial</i>	52	48	47	1	97.92	2.08
<i>essential</i>	200	172	166	6	96.51	3.49
<i>indispensable</i>	2	2	2	0	100.00	-
<i>necessary</i>	200	154	129	25	83.77	16.23
<i>needful</i>	21	20	20	0	100.00	-
<i>vital</i>	200	184	181	3	98.37	1.63
Total	1415	1102	1031	71	93.56	6.44

cifies what the conclusion will look like, i.e. a closer clarification of the vernacular issue in Christian missionary translation. These examples thus illustrate that expressions of desirability can function on two levels, i.e. an SoA-related and speaker-related level. Intuitively, it is the SoA-related use that constitutes the core meaning of desirability, which is substantiated by its higher frequency in the sample relative to the speaker-related use, cf. Table 71 (93.56% versus 6.44%). However, as argued in Van linden (2010d), this skewed distribution may partly be explained by the discourse preferences of the two types in combination with the composition of the corpus (see section 3.2).

Deontic expressions are not the only type of linguistic category that can function on two different levels. The same has been observed for inter-clausal relations (e.g., Davies 1979: 146–176; Sweetser 1990: 76–112;⁹⁰ Verstraete 2007: ch. 9). In his discussion of *because*-clauses, for instance, Verstraete points out that structures can be “distinct in terms of the aspect of the main clause to which the secondary clause [underlined in the examples, AVL] is related” (2007: 227).

- (48) “Was that why you returned to Salzburg after the war? In the hope that Elke Knödel would come back, too?” “I came back because this is my home. When you’ve suffered six years in a concentration camp, blending into the scenery, as you put it, seems a welcome, a comfortable refuge.” (CB ukbooks) (cited in Verstraete 2007: 227 [1])

In (48), the *because*-clause is related to the SoA described in the main clause: it gives the reason why the speaker returned to Salzburg after the war (Verstraete 2007: 227). Therefore, this example instantiates the SoA-related use of the relation of reason. In (49) and (50), however, the *be-*

90 In her discussion of interclausal relations, Sweetser (1990: 76–112) distinguishes between the content, epistemic and speech act domain, which corresponds to Verstraete’s (2007: 227–243) distinction between SoA-related, speaker-related argumentative and speaker-related speech act levels in the same linguistic category (see below). Sweetser (1990: 49–75) applies the same distinction to the category of modality, in which the content domain corresponds to root meanings of modal auxiliaries, the epistemic domain to epistemic meanings, and the speech act domain to conversational meanings, as in *He may be a university professor, but he sure is dumb*. In this chapter, however, I use the distinction between SoA-related and speaker-related levels within two specific categories, namely deontic and directive meaning.

cause-clauses are not related to the SoA described in the main clause, but rather to “some aspect of the speaker’s role in that main clause” (Verstraete 2007: 227), thus illustrating speaker-related uses.

- (49) Sam Torrance was feeling sweet then sour during the final round of the Heineken World Cup of Golf. A curious or a wily Chinese spectator pinched his ball on the last hole yesterday in the People’s Republic. ... “The ball was definitely picked up because I saw it bounce twice and there was nowhere for it to get lost,” Torrance said. (CB today) (cited in Verstraete 2007: 237 [13])

In (49) the *because*-clause justifies the speaker’s conclusion reached at in the main clause: “the fact that the speaker saw the ball bounce in an area where it could not normally be lost serves to support his argument that the ball was picked up by one of the spectators” (Verstraete 2007: 236).

- (50) Tell me first of all the history of marmalade. Now where does the name come from? Because I’ve heard stories and I don’t know if they’re true. (CB ukspok) (cited in Verstraete 2007: 237 [14])

In (50), the *because*-clause indicates the reason for the speech act performed by the speaker: “the fact that the speaker doubts the reliability of some stories he/she heard about the origin of the word *marmalade* serves to justify why he/she asks the interlocutor to explain where the word comes from” (Verstraete 2007: 237). The speaker-related category can thus be divided into an argumentative (as in [49]) and a speech act subtype (as in [50]) (Verstraete 2007: 236–242). Considering the deontic expressions discussed here, it is especially the SoA-related and argumentative speaker-related use that can serve as points of comparison. In what follows, I will focus on the speaker-related uses of deontic expressions.

A closer study of the speaker-related deontic expressions shows that it is useful to distinguish between two types, i.e. a text-building and a mental focus type. The first type pertains to a text as a speaker/writer’s artefact, while the second type involves the speaker/writer encouraging the hearer/reader to focus mentally on a specific propositional content. I will argue that this second type can be conceived of as a partially filled construction, similar to the locative and KAK patterns discussed above (sections 8.1.5 and 8.1.6).

8.3.2. Text-building use

As pointed out above, writers can draw on deontic expressions to construe texts, for example to specify its structure or to build a certain argument. In the sample, these text-building examples are confined to factual genres, especially to expository writings (cf. Martin 1992: 562–563); they all come from books or magazines. An example is given in (51).

- (51) In order to validate the assumptions that non-Western cultures and civilizations were despotic and that the political system of despotism was configured by the social necessity of harnessing collective efforts to the construction and maintenance of agricultural waterworks, it is **necessary** to determine if all historical despotic systems were indeed based on the environmentally imposed need for hydraulic works. Such, however, is not the case. Pharaonic Egypt did build some major canals ... but its sustenance depended on the natural rise and fall of the Nile and it probably dedicated most of its surplus and its physical energies and technical prowess to the construction of temples and monuments. Central Asia, where ... despotism was incubated and from where it supposedly spread to the Asian fringes, is notably devoid of waterworks and canals. (CB, ukbooks)

In (51), the writer uses a deontic expression to render the logical step(s) in his or her line of argument explicit. It is clear from the excerpt that it is the writer him- or herself who is going to carry out the action assessed as desirable: he or she will determine if all historical despotic systems were based on the need for hydraulic works. This is why the following stretch of discourse substantiates his or her statement that such is not the case. The deontic expression thus motivates the subject matter of the ensuing discourse.

- (52) And throughout the coin world, the jovial Paul Davies has proved a man of his word, respected on the coin circuits of Europe, America and Japan. Yet Davies' sterling reputation has been repeatedly called into question during his attempts to recover 1,000 Showa gold coins he supplied to the Nihonbashi branch of Fuji Bank, as well as more than 3,000 others which were subsequently seized, and his friendly disposition has been sorely tested as he has tried to reclaim what he regards as rightfully his. It is, in many ways, a very Japanese affair. It involves fear of losing face, bureaucratic bungling and a distrust of foreigners. ... But, three years after the

scandal first broke, no crime has been established and no charges have been brought. To appreciate the nature and extent of Davies' alleged criminal coup, it is **necessary** to understand Japan's position in the coin world. By the mid-Eighties the Japanese had established their ability to earn money, yet they remained relative novices in the making of artful currency. Of course, the Japanese Mint Bureau's main Osaka Mint, along with its branches in Tokyo and Hiroshima, produced quality everyday legal tender, but the minting of gold coins had not been attempted in the country since 1927. (CB, ukbooks)

In (52), the deontic expression is used to convey the writer's general idea that if we want to appreciate the nature and extent of Davies's alleged criminal coup discussed in the previous discourse, we have to understand Japan's position in the coin world. Again, the writer uses the deontic expression to proceed with his or her text: it justifies why the following discourse focuses on the history of Japanese coins. Thus, text-building examples serve to bring across the writer's opinion and strengthen his or her arguments, or to indicate or motivate the logical steps in an argumentation or the structure of the discourse. These examples are therefore clearly different from assessments of desirability of actions in the outside world. More details on the discourse semantics of the text-building examples can be found in Van linden (2010d: 731–732).

In the sample, the text-building examples show some structural similarities to a certain degree. All matrix clauses are copular constructions, typically with a present indicative finite or tentative *would*, temporally grounding the deontic estimation in the here-and-now of the writer's text-building activity. However, the examples also show variety, for example in the formal type of complement (*that*- or *to*-clauses), and, within the group of *to*-clause constructions, in the type of reference to the implied subject. That is, the understood infinitival subjects can have either specific reference, as in (47) and (51), with the subjects being co-referential with the writers, or arbitrary reference, as in (52), with the subjects being anyone. In the sample, the expressions with weak adjectives all involve specific reference, whereas the examples with strong adjectives can be of either type (I have not been able to determine why this is the case). Table 72 presents the adjectives found in text-building constructions and it indicates the frequency of the formal types of complement. Table 73 summarizes the findings of the finite forms in the matrices and *that*-clauses.

Table 72. The adjectives occurring in the text-building use

Adjective	Number of occurrences in the sample	Number of deontic uses	Number of text-building uses			% of text-building uses	
			<i>that</i>	<i>to</i>	total	relative to sample	relative to deontic uses
<i>appropriate</i>	133	90	1	7	8	6.02	8.89
<i>convenient</i>	33	32	0	1	1	3.03	3.13
<i>good</i>	200	74	0	1	1	0.50	1.35
<i>important</i>	200	193	0	1	1	0.50	0.52
<i>proper</i>	25	18	0	1	1	4.00	5.56
<i>essential</i>	200	172	0	1	1	0.50	0.58
<i>necessary</i>	200	154	1	18	19	9.50	12.34
Total	991	733	2	30	32	3.23	4.37

Table 73. The TAM properties of matrix and *that*-clause finite forms of the text-building use

Type of finite	Fr	Indicative forms		Modalized forms		
		pres	past	pres subj	<i>will</i>	<i>would</i>
matrix (32)	n	26	1	-	1	4
	%	81.25	3.13	-	3.13	12.50
<i>that</i> -clause (2)	n	1	-	1	-	-
	%	50.00	-	50.00	-	-

8.3.3. Combined pattern of mental focus on proposition

The deontic mental focus type has a particular semantic-pragmatic value, in that it is used by the speaker/writer to urge the hearer/reader to focus on the propositional content of the secondary *that*-clause. In this sense, it is much akin to the non-modal evaluative mental focus type, discussed in section 8.1.1. The diachronic data showed that the deontic mental focus pattern can be seen as the predecessor of the non-modal evaluative mental focus type (see section 6.4.1). It will become clear, for instance, that the matrices of the deontic type share many properties with those of the non-modal evaluative type. As explained in more detail in Van linden (2010d: 733–734), deontic mental focus uses are found in a more diverse set of genres than text-building uses, and they are mainly used to foreground a specific piece of information or opinion in a context of contrast. A few examples are given below.

- (53) Jonathan Seamons ... has been taking pictures for three months ... Jon is one of the few people who use a 200mm as a standard lens, but with a lens of this length it's **vital** to remember that you won't get the best out of it unless you either bolt is [sic] on a steady tripod or shoot at faster than 1/250 sec. (CB, ukmags)
- (54) The problem of normal masculinity. Finally, it is **necessary** to recognize that part of abolishing men's violence to young people is the transformation of our relationship to each other, including the violence that we do to each other and to ourselves. (CB, ukbooks)
- (55) Regular monitoring of nuclear workers and their working environment is carried out to ensure that these levels are not exceeded. It is **important** to realise that it is not just workers in the nuclear industry who are subject to radiation exposure in their place of work. Aircrews are exposed to as much radiation as an average nuclear industry worker. (CB, ukephem)
- (56) However, to threaten your own life suggests a high degree of despair, and even if that intense hopelessness is short-lived, it is still serious. Thus psychiatric teams usually hope to see all those who attempt suicide admitted to hospital after the attempt. ... For many patients it is the first time someone has taken their feelings seriously; this may be especially true of adolescents... . Watching adolescent love it is **good** to remember that Romeo and Juliet were very young – it is all to [sic] easy to forget the emotional intensity of youth. (CB, ukbooks)

Interestingly, the examples show that – unlike the non-modal evaluative type – the deontic pattern is not restricted to importance adjectives.⁹¹ Yet, much like the examples of the KAK pattern, the expressions above share a particular constructional make-up. They are characterized by a combined pattern of complementation, with a primary *to*-complement in turn complemented by a (secondary) *that*-clause (see section 6.2.3). The extraposed *to*-clause consistently contains a cognition predicate, whose SoA is – like

91 Note that the constructions with non-importance adjectives such as *good* and *necessary* did not further develop along the same lines as those with *essential* or *important* (as discussed in section 6.4.1): *necessary* is simply not found with propositional complements (its semantics is not compatible with a propositional complement); *good* is often combined with propositional complements, but the construction in (56) without the primary *to*-clause (i.e. *it is good that Romeo and Juliet were very young*) has a general commentative meaning (cf. section 8.1.2), rather than a mental focus meaning (cf. section 8.1.1).

the ones in the text-building type but unlike the ones in the KAK pattern – tenseless or potential, i.e. it has not been actualized or is not being actualized at the moment of deontic evaluation, nor is there any contextual clue as to its actualization being certain at some point in the future. Unlike both in the text-building and KAK type, however, the implied subjects of the *to*-clauses invariably have arbitrary reference, so that by definition the hearer/reader is included. In addition, all matrix constructions have an affirmative present indicative copular finite form. These specific formal and semantic properties jointly give rise to the specific semantic-pragmatic meaning of the construction as a whole: the speaker/writer encourages the hearer/reader to focus on the propositional content referred to in the secondary *that*-clause. This meaning is compatible with the characteristics listed above (e.g., the matrix finite forms locate the speaker/writer's action of urging the hearer/reader in the here-and-now of the speech event), but it is not fully predictable from them. We can therefore conclude that the deontic mental focus construction is a construction in the sense of Goldberg (1995, 1996). I will argue below that it even constitutes a partially filled construction.

Apart from the formal properties of the matrix finite verb, the preliminary discussion of the deontic combined construction in section 8.1.1 has also touched on some characteristics of the secondary *that*-clause. It was stated that the propositional *that*-clauses, as in (53) to (56), never involve attitudinal *should*. This fact need not surprise us, as the *that*-clauses do not function as direct complements of evaluative matrices, but of mandative *to*-clauses expressing mental action. If we take a closer look at the form and meaning of the secondary *that*-clauses, we can see that they can actually take any form and function of a declarative matrix clause. The *that*-clauses in (53) to (56) above are non-modalized statements. In addition, secondary *that*-clauses can be deontic expressions, as in (57) (the modalized finite form is underlined),

- (57) If you are helping someone with hypnosis, ask him or her to rehearse this time limit while in hypnosis, then bring the subject out of hypnosis and ask him or her to practise in front of you. It is **important** to note that if the practice is then done daily, by the end of the week you should be able to imagine the actions (such as your arm falling), like a rehearsal in your mind. (CB, ukbooks)

directive expressions, as in (58),

- (58) It is the “law of the land” that children under 12 years of age cannot be admitted to a “U” or “PG” film after 7 pm unless they are accompanied by an adult, it is also **important** to note that all children must be paid for and that babies in arms regrettably cannot be admitted to any part of the programme. (CB, ukephem)

and epistemic expressions, as in (59).

- (59) Finally you must be aged 18 or over, and live in the UK, to invest through a PEP. And is that it? Not quite. It’s **important** to bear in mind that the value of investments within a PEP, and any income from them, can go down as well as up - so you might get back less than you invested. (CB, ukephem)

The finding that the examples in (57) to (59) still share the same basic semantic-pragmatic meaning with the examples in (53) to (56) confirms that the constructional features of the mental focus pattern all pertain to the unit of matrix and primary *to*-complement, leaving the semantic and formal properties of the secondary *that*-clause unspecified.

This observation is further corroborated by the meaning of a set of very similar – yet somewhat different – constructions, featuring a verbalization predicate instead of a cognition predicate. The following examples demonstrate that the more a construction differs from the mental focus construction in terms of matrix (construction type, polarity and TAM marking of the matrix finite form) and predicate in the *to*-clause, the less it fulfils its specific function.

- (60) Drabble’s new entry on Martin Amis in the Oxford Companion ... is a straight-faced catalogue *raisonnee* of the novelist’s principal works, with some neutral biographical facts, whereas Parker’s Amis entry informs us that his work has been blackballed by feminists ... and recounts in gory detail the ferocious reviews that Amis’s novel *Time’s Arrow* “received designer gas ovens”, *The Spectator*; “bone-headed”, Tom Paulin. Parker also sees **fit** to inform us that, “In 1994, Amis left his wife for the American writer Isabel Fonseca, a domestic matter which became headline news, partly perhaps because of the author’s earlier pronouncements about fatherhood and family.” In my view, this is a fact too far, although many will relish the pervasive bitchiness of the volume’s entries. (CB, times)

Unlike in (53) to (59) above, the matrix *Parker sees fit* in (60) is a complex transitive construction. As a whole, the expression seems to draw the hearer/reader's attention both to the *to*-clause (note that it has the oblique object *us* in addition to the object *that*-clause) and to the *that*-clause, rather than mainly to the secondary *that*-clause; it is Parker's action of telling us some juicy details that is condemned by the speaker/writer in the next sentence. Examples (61) and (62) both have copular matrix clauses.

- (61) Ian Stevenson, "The 'Perfect' Reincarnation Case", in William G. Roll, Robert L. Morris and Joanna Morris, eds., *RIP* 1972. The Scarecrow Press, 1973, pp. 185–187. Describes all the features of a perfect reincarnation case. It should not be **necessary** to add that such a case has not been found. (CB, ukbooks)

In (61), the use of the negative and modalized matrix verb phrase (*it should not be*) actually plays down the importance of the propositional content of the secondary *that*-clause; the writer assumes that it is (or should be) clear enough that a perfect reincarnation case has not been attested yet.

- (62) The implication could be that Chinese astronomy-astrology had its origins in a northern mountainous region, although this is not necessarily the case. It is **important** to stress that Chinese and Western methods developed as independently as their folklore and legends. (CB, ukbooks)

The matrix in (62), finally, has all the properties of the matrix of the deontic mental focus type, i.e. it has an affirmative present indicative copular finite form. Not surprisingly, the semantic-pragmatic value of the construction as a whole comes very close to that of the last type as well. What is still dissimilar is the type of predicate (verbalization in place of cognition) and the referential properties of the infinitival subjects: the implied subject of the *to*-infinitive in (62) (and [60]–[61]) has specific reference (it is the speaker/writer who should stress the propositional content of the *that*-clause), whereas the subjects in examples (53) to (59) have arbitrary reference, so that the *to*-clauses can more readily be understood as appealing to the hearer. It can thus be assumed that the more a certain example with a verbalization predicate has the formal properties typical of the mental focus examples with a cognition predicate, the more readily it tends to be interpreted as such. Stated differently, it is only the specific constructional make-up of the mental focus construction that gives rise to the meaning of a speaker/writer making the hearer/reader focus on a particular propositional

content. Table 74 lists the adjectives found with cognition and verbalization *to*-infinitives complemented by secondary *that*-clauses, and Table 75 shows the formal features of the matrix finite forms.

Table 74. The adjectives occurring in the deontic mental focus type with cognition and verbalization predicates

Adjective	Number of occurrences in the sample	Number of deontic uses	Number of mental focus uses			% of mental focus uses	
			<i>that</i>	<i>to</i>	total	relative to sample	relative to deontic uses
(i) cognition predicates							
<i>good</i>	200	74	0	1	1	0.50	1.35
<i>important</i>	200	193	0	19	19	9.50	9.84
<i>essential</i>	200	172	0	3	3	1.50	1.74
<i>necessary</i>	200	154	0	3	3	1.50	1.95
<i>vital</i>	200	184	0	2	2	1.00	1.09
total	1,000	777	0	28	28	2.80	3.60
(ii) verbalization predicates							
<i>fit</i>	49	49	0	1	1	2.04	2.04
<i>important</i>	200	193	0	3	3	1.50	1.55
<i>crucial</i>	53	48	0	1	1	1.89	2.08
<i>essential</i>	200	172	0	2	2	1.00	1.16
<i>necessary</i>	200	154	0	3	3	1.50	1.95
<i>vital</i>	200	184	0	1	1	0.50	0.54
Total	902	800	0	11	11	1.22	1.38

Table 75. The TAM properties of the matrix finite forms of the deontic mental focus type with cognition and verbalization predicates

Type of finite	Fr	Indicative forms			Modalized forms	
		pres	pres perf	past	<i>would</i>	<i>should</i>
(i) cognition predicates						
matrix (28)	n	27	-	-	1	-
	%	96.43	-	-	3.57	-
(ii) verbalization predicates						
matrix (11)	n	7	1	2	-	1
	%	63.64	9.09	18.18	-	9.09

Table 74 shows that in the sample the deontic mental focus construction is most frequent with the adjective *important*. This finding is supported by the outcome of the multiple distinctive collexeme analysis, which is based on exhaustive samples of the *to*-complements found with the adjectives studied here (see chapter 7). Table 76 lists the ten collexemes that are most

strongly attracted to the *to*-infinitive slot of the extraposed *to*-infinitive construction with *important* and the ten items that are most strongly repelled by it. Likewise, Table 77 shows which predicate classes are preferred or disliked. Both tables indicate that *important* favours cognition verbs in its *to*-complements. In Table 76, the three most strongly attracted verbs are *remember* ($p=3.12E-12$), *realize* ($p=1.70E-07$) and *note* ($p=1.14E-06$). Further down the list we find *understand* and *recognize*, and the verbalization predicate *stress* (cf. discussion of [62]). (Note that the most strongly repelled items include those expected in the non-modal evaluative locative and KAK patterns.) The tables thus show that compared to the other 21 adjectives included in the multiple distinctive collexeme analysis, *important* is special in that it prefers cognition verbs in the extraposed *to*-infinitive construction.

Table 76. The collexemes most strongly attracted to and repelled by the *to*-infinitive slot of the extraposed *to*-infinitive construction with *important*

Distinctive for A (attracted)					Distinctive for B (repelled)				
Collexeme	Obs. Freq. in A	Obs. Freq. in B	Fisher Yates p-value	Bonferroni correction	Collexeme	Obs. Freq. in A	Obs. Freq. in B	Fisher Yates p-value	Bonferroni correction
remember	46	6	3.12E-12	6.87E-11	see	11	74	2.52E-09	5.55E-08
realize	18	0	1.70E-07	3.74E-06	be_locative	1	26	6.81E-06	1.50E-04
note	21	2	1.14E-06	2.50E-05	go	5	26	1.77E-03	3.89E-02
try	23	6	4.85E-05	1.07E-03	make	11	33	1.27E-02	2.78E-01
understand	22	6	9.27E-05	2.04E-03	hear	0	7	2.12E-02	4.67E-01
make_sure	15	2	1.16E-04	2.56E-03	meet	0	6	3.68E-02	8.10E-01
stress	11	1	5.51E-04	1.21E-02	obtain	0	5	6.39E-02	1.41E+00
recognize	15	4	1.23E-03	2.71E-02	travel	0	5	6.39E-02	1.41E+00
verb_perspective	7	0	2.38E-03	5.24E-02	use	5	16	6.40E-02	1.41E+00
feel	6	0	5.66E-03	1.25E-01	discuss	2	9	9.09E-02	2.00E+00

Table 77. The predicate classes attracted to and repelled by the *to*-infinitive slot of the extraposed *to*-infinitive construction with *important*

Distinctive for A (attracted)					Distinctive for B (repelled)				
Collexeme: predicate classes	Obs. Freq. in A	Obs. Freq. in B	Fisher Yates p-value	Bonferroni correction	Collexeme: predicate classes	Obs. Freq. in A	Obs. Freq. in B	Fisher Yates p-value	Bonferroni correction
cognition	394	302	4.59E-20	1.01E-18	material	357	707	0.00E+00	0.00E+00
possession	90	76	8.68E-04	1.91E-02	perception	14	79	8.73E-09	1.92E-07
affection	13	9	8.35E-02	1.84E+00	location	6	37	5.67E-05	1.25E-03
intensive	48	53	1.61E-01	3.55E+00	existential	0	4	1.11E-01	2.44E+00
utterance	46	56	3.12E-01	6.86E+00					
behavioural	1	0	4.23E-01	9.30E+00					

Table 78. The collexemes most strongly attracted to the *to*-infinitive slot of the extraposed *to*-infinitive construction with *good* and *essential*

Collexeme	<i>good</i> : distinctive for A (attracted)				Collexeme	<i>essential</i> : distinctive for A (attracted)			
	Obs.	Obs.	Fisher	Bonferroni		Obs.	Obs.	Fisher	Bonferroni
	Freq. in A	Freq. in B	Yates p-value	correction		Freq. in A	Freq. in B	Yates p-value	correction
see	65	20	3.95E-45	8.69E-44	have	12	78	2.20E-03	4.85E-02
be_locative	21	6	4.34E-15	9.54E-14	set	3	3	2.55E-03	5.62E-02
know	29	48	4.10E-09	9.01E-08	register	2	0	2.77E-03	6.08E-02
talk	14	18	6.70E-06	1.48E-04	grow	2	0	2.77E-03	6.08E-02
hear	6	1	1.91E-05	4.20E-04	maintain	3	7	1.31E-02	2.88E-01
meet	4	2	2.61E-03	5.73E-02	establish	3	7	1.31E-02	2.88E-01
stretch	2	0	1.47E-02	3.23E-01	keep_cont.	5	31	3.82E-02	8.41E-01
get_back	2	0	1.47E-02	3.23E-01	put_to_use	1	0	5.28E-02	1.16E+00
get_possession	10	29	1.49E-02	3.28E-01	heat	1	0	5.28E-02	1.16E+00
be_noun	6	12	1.58E-02	3.47E-01	master	1	0	5.28E-02	1.16E+00

Table 79. The collexemes most strongly attracted to the *to*-infinitive slot of the extraposed *to*-infinitive construction with *necessary* and *vital*

Collexeme	<i>necessary</i> : distinctive for A (attracted)				Collexeme	<i>vital</i> : distinctive for A (attracted)			
	Obs.	Obs.	Fisher	Bonferroni		Obs.	Obs.	Fisher	Bonferroni
	Freq. in A	Freq. in B	Yates p-value	correction		Freq. in A	Freq. in B	Yates p-value	correction
move	6	1	4.62E-04	1.02E-02	solve	2	0	1.17E-03	2.58E-02
increase	4	0	1.87E-03	4.12E-02	rebuild	2	0	1.17E-03	2.58E-02
determine	4	0	1.87E-03	4.12E-02	learn	2	5	2.20E-02	4.84E-01
stop	4	0	1.87E-03	4.12E-02	check	3	15	2.21E-02	4.87E-01
make	17	27	4.91E-03	1.08E-01	express	1	0	3.45E-02	7.58E-01
resist	3	0	9.03E-03	1.99E-01	uncover	1	0	3.45E-02	7.58E-01
paint	3	0	9.03E-03	1.99E-01	come_idiom	1	0	3.45E-02	7.58E-01
explore	5	3	1.24E-02	2.72E-01	keep_out_of	1	0	3.45E-02	7.58E-01
take	12	19	1.69E-02	3.73E-01	ascertain	1	0	3.45E-02	7.58E-01
cut	3	1	3.05E-02	6.71E-01	replenish	1	0	3.45E-02	7.58E-01

Tables 78 and 79 present the ten most strongly attracted verbs of the four other adjectives attested in the deontic mental focus construction (see Table 74 above). As suggested by the low frequency of *good*, *essential*, *necessary* and *vital* in the mental focus construction (see Table 74), it is clear from the tables that none of the ten most strongly attracted items of these four adjectives include a cognition verb that can be used in this construction. These data thus verify that *important* is the model adjective of the mental focus construction, which is consistent with the diachronic analysis proposed in section 6.4.1 (see also Van linden and Davidse 2009). On the whole, we

can conclude from the discussions that the deontic mental focus construction is a partially filled construction like the locative and KAK construction (see sections 8.1.5 and 8.1.6) with a limited set of lexical items occurring in two of the six slots (in boxes), as shown in Figure 22.

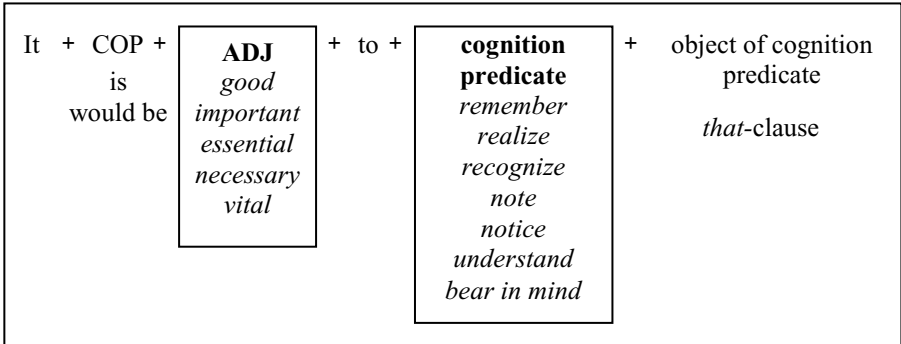


Figure 22. The deontic mental focus pattern as a partially filled construction

In conclusion, with the distinction between SoA-related and (types of) speaker-related deontic uses, I have made semantic refinements of a category that has previously been treated as fairly homogeneous in the literature. It is especially the SoA-related use that has been identified as the core meaning of deontic modality. This view has been confirmed by the data presented here, which show an overwhelming frequency of SoA-related uses (cf. Table 71). The speaker-related uses are far less frequent, mainly since they are more restricted in terms of genre and discourse semantics (for more details see Van Linden 2010d).

As in the two speaker-related subtypes the speaker/writer is easily identified as the attitudinal source of the deontic assessment, the structures are equally easily categorized as deontic expressions. However, in the analysis of SoA-related constructions with strong adjectives, it is not always straightforward to decide on whether a structure conjures up an attitudinal source, in which case it expresses deontic meaning, or does not, in which case it expresses dynamic meaning. This significant problem of the delineation between dynamic and deontic modality will be dealt with in the next section.

8.3.4. Strong adjectives: The distinction between dynamic and deontic modality

The study of the complement relations established in dynamic and deontic constructions, presented in section 6.2.1, already showed that the two modal categories in the conceptual map are very similar. They differ only in one respect, i.e. semantic integration, in just one analysis (if the matrices of deontic constructions are viewed as desiderative predicates rather than as modal predicates, which include the matrices of dynamic constructions). Thus these findings suggested that the delineation between dynamic and deontic modality is not as hard and fast as represented in the literature, for example, by von Wright (1951b: 28, 36), Goossens (1985: 204), Palmer (2001: 9–10) and Nuyts (2005, 2006). In this section, I will argue that the issue of the distinction between the two categories is not an analytical problem, as the principles and criteria are clear. In fact, I will argue that the problem of delineation is predicted by the diachronic analysis presented here, especially the adjective-focused part (chapter 4). Although some examples with strong adjectives are in principle ambiguous between dynamic and deontic meaning, it is not necessary to give up the distinction altogether. I will propose some semantic-pragmatic criteria on the basis of which the examples can be assigned to one of the two categories. It will become clear that the notion of relationality introduced in chapter 4 is helpful here.

To start the discussion on the distinction between dynamic and deontic modality, it is useful to go back to the definitions of these two categories. As described in sections 1.1.1 and 2.2.1, dynamic constructions with strong adjectives express situational necessity, that is, necessity inherent in the situation at issue. Crucially, such constructions do not contain any expression of the attitude of the speaker or another attitudinal source; the necessity is indicated on SoA-internal grounds. The structure in (63), for example, indicates the need to have the support of 100 MPs in order to give the bill a second reading (which is ultimately needed to have the bill passed).

- (63) Now we have the chance to protect wild animals from this kind of sickening cruelty. On 14th February, Parliament will debate the Wild Mammals (Protection) Bill. We must persuade our mps to support the Bill – it's a Private Member's Bill, and so it is **essential** that at least 100 mps support it, or it will get thrown out without a second reading. (CB, ukephem)

This necessity is inherent in the parliamentary system of Great Britain (see also section 1.1.1, example [8]). Deontic expressions with strong adjectives, by contrast, involve the expression of someone's stance on the necessity of a particular SoA (see sections 1.1.2 and 2.2.2). Importantly, the attitudinal source commits him- or herself to the SoA in terms of moral principles, which are external to the SoA. In (64), for instance, the speaker thinks it is morally necessary that unruly kids are taken in hand before they turn into yobs.

- (64) Parents have to take responsibility for teaching their own [children, AVL] the difference between right and wrong. In this current climate, it is **vital** that unruly kids are taken in hand before they turn into yobs. (CB, sunnow)

In essence, therefore, the difference between dynamic and deontic expressions with strong adjectives lies in the presence of an attitudinal source, who estimates the necessity of the SoA on the basis of SoA-external grounds.

As suggested by the diachronic analysis of the adjectival matrices put forward in chapter 4, the problem of the delineation between dynamic and deontic modality can be attributed to the demonstrability of an attitudinal source. In the case-studies on the development of deontic meaning in the strong adjectives *essential*, *vital*, *crucial* and *critical*, it was proposed that the final change from dynamic to deontic meaning involved the process of subjectification as defined by Traugott (1989: 35). What is crucial here is that this semantic process does not systematically relate to differences in the structure of linguistic expressions. In other words, the presence of an attitudinal source need not be overtly or structurally marked in the extraposition constructions studied here. The expressions in (63) and (64) above, for instance, have the same formal properties; yet they seem to differ in type of meaning. It should be noted that it is especially the absence of an attitudinal source which is hard to demonstrate in the extraposition constructions. On the one hand, as discourse is created by speakers, who can also represent the speech and thought of other speakers, it is basically possible to interpret any apparent dynamic expression as a deontic one. The structure in (63), for example, can be interpreted as 'within the parliamentary system it is necessary that at least 100 MPs support the bill to give it a second reading, and I think it is essential that this happens, because I feel it is highly desirable that we protect wild animals'. On the other, the linguistic material does provide expressive devices to suggest the presence of an attitudinal source. In (65), the active complex transitive construction in the

matrix shows that the translator can be indicated as the attitudinal source (and also agent) of the censoring activity. In (66), the disjunct *in my view* (underlined) clearly identifies the speaker as the attitudinal source (cf. McGregor [1997: 232] on attributional modification).

- (65) The book was published in English translation in 1886, and it is amusing to note that the translator found it **necessary** to censor some of the more earthy passages of the original, which were presumably not thought suitable for the eyes of young Victorian ladies. (CB, ukbooks)
- (66) I pointed out that MI-5 refused all contact with a former colleague who was now working in my organisation. Indeed, they had carried non-cooperation and non-recognition to the absurd extent of declining even to receive our reports. ... I stressed that, in my view, it was absolutely **essential**, indeed **indispensable**, to restore the availability of MI-5 material to selected recipients. (CB, ukbooks)

Thus, the problem of delineation between dynamic and deontic modality can be explained by the fact that the English language does not provide devices to encode the absence of an attitudinal source in the extraposition constructions with strong adjectives.

However, the lack of formal means to definitively distinguish between dynamic and deontic extraposition constructions does not invalidate the distinction between the two modal categories. Although this lack may suggest that the dynamic category actually constitutes a subtype of deontic modality, there are indications that this is not the case. The most important reason is that the binary nature of the dynamic category (see sections 1.1.1, 1.2.1 and 2.2.1) does not square with the scalar nature of the deontic category. With regard to the adjectives studied here, this is reflected by the fact that only strong adjectives and not weak ones are found to express situational necessity (see section 2.2.1). In addition, in dynamic expressions such as (67) (see sections 1.1.1 and 2.3 for discussion of this example), native speakers do not judge any of the weak adjectives suitable to replace *necessary* (except for *important*, which was already seen to pattern more like strong adjectives than prototypical weak ones in other respects, cf. sections 8.1.1 and 8.3.3).

- (67) There had followed a nightmare procession along the sewer for what felt like and doubtless was several miles. For the first part of their journey it was **necessary** to move doubled up, in a position of almost unbearable discomfort. After what seemed at least an hour

but was probably ten minutes they reached mercifully, a larger, higher sewer tunnel and could move upright. (CB, ukbooks)

Thus, it is felt that for expressions such as (67) it is not relevant to assess the action as appropriate, proper or good. The context suggests that the action of moving doubled-up is imposed by the physical properties of the sewers the speaker is walking in. Note that *necessary* can be paraphrased by ‘the only possibility’ here, which clearly points to the binary nature of the dynamic category. Therefore, the notion of situational or “circumstantial” necessity (Palmer 1990: 113) seems to capture the meaning of particular expressions in specific contexts more rightly than that of deontic modality.

The question remains how to distinguish between dynamic and deontic expressions. Again it is useful to return to the diachronic findings of chapter 4, in this case to the notion of relationality. It appeared from the case-studies that in the dynamic stages the adjectives establish a relation of necessity or indispensability between a particular condition and goal. In dynamic expressions, condition and goal are equally prominent, and the relation of contingency resides in the situation being described (see example [63] above). For the deontic stages, it was noted that the goal for which a certain SoA is assessed as desirable may not be expressed and it may be hard to infer from the context, as in (68).

- (68) Herbert Daniels, the group’s founder, believes that it is **essential** to overcome the social stigma of Aids, which often means that people with the virus lose their homes, jobs and families, and are effectively condemned to death by society. (CB, bbc)

In such examples, the goal can only vaguely be paraphrased as ‘what the attitudinal source considers as morally good in general’ or ‘to make the world a better place’. It can thus be argued that in such expressions, the adjective still has relational meaning, but less prominently than in dynamic expressions. From this description we can derive two categories: dynamic expressions with a condition-goal structure (and the possible presence of an attitudinal source) and deontic expressions without an expression of goal (or a very vague one as mentioned above) but with prominent presence of an attitudinal source. Not unexpectedly, however, the data call for a third, intermediate category: expressions with a condition-goal structure and presence of an attitudinal source. In such expressions, the relation of contingency typically resides in the source’s stance, as in (69).

- (69) Through Parliament and the media, at national and local level, the League stands up for wildlife – exposing the cruelties and aiming to secure for wild animals the legal protection they are currently denied. With public opinion firmly on our side it is **vital** that we act now to exert all possible pressure to end this cruelty once and for all. (CB, ukephem)

Here, the speaker argues that in order to exert all possible pressure to end cruelty against wild animals it is vital to act now. This argument has a condition-goal structure, but unlike in the case of (67) above, the relation of contingency does not reside in the situation, but rather in the speaker's own opinion. In addition, it is clear from the context that both condition and goal are assessed as desirable. It is expressions with a condition-goal structure that need to be looked at more closely.

In order to determine whether a certain condition-goal relation is SoA-internally or SoA-externally motivated, it is useful to consider a number of pragmatic factors, such as, for example, context, world knowledge, or the speaker's communicative purpose. Consider the following examples.

- (70) Rockwool energysaver Multi Purpose Slabs are designed to fit between standard wall tie spacings and are easily incorporated into the wall during construction. No special wall ties are required. It is **essential** that the joints are kept clean and are a tight fit. (CB, ukephem)

In (70), the modal expression itself has no condition-goal structure, but it needs specific information from the preceding context to make sense: if you want to install the Rockwool Multi Purpose Slabs between your wall tie spacings properly, it is essential that the joints are kept clean and are a tight fit. As we know that joints may be a weak spot, we can understand that this relation of contingency may reside in the nature of the things talked about. Therefore, we can conclude that the example has dynamic meaning.

- (71) I say “up there” meaning the high lake above Llyn Lliwiog, a remote barren tarn that was my best retreat. To reach this high lake it was **necessary** to climb to the Diffwys, to go the length of that dark valley and to climb again the height of the rim at its far end: from there it was a gentle walk down to the lake. (CB, ukbooks)

The expression in (71) does have a condition-goal structure. Here again, world knowledge plays an important part: we know that lakes and moun-

tains are elements of the landscape, and hence that the relation of contingency at issue once more resides in the nature of the things talked about. Thus, I conclude that (71) expresses situational necessity as well.

- (72) Ant [sic] injured animal will be shocked, frightened and in pain to some degree. Therefore most animals ... will resent efforts to help them, and in some cases will react violently. It is therefore absolutely **vital** you approach the animal as calmly and reassuringly as possible. The initial approach and control are best carried out together with the owner if possible, as even the most frightened animal will usually heed a person whom it knows. (CB, ukephem)

The expression in (72) also has a circumstantial flavour; yet it is different from the two previous examples. The SoA-internal element is given in the preceding sentences: it lies in the nature of animals that when they are injured, they are often shocked, frightened and in pain, and they will therefore resent efforts to help them, and sometimes even react violently. The modal expression itself can be paraphrased as ‘if you do not want the injured animal to attack, it is vital that you approach it as calmly and reassuringly as possible’. It should be noted that in this case, unlike in (71) above, the realization of the condition activity (approaching the animal as calmly and reassuringly as possible) will not necessarily entail the realization of the goal activity (the animal not attacking you). Moreover, the speaker has formulated the expression in such a way that the hearer may take it personally. Or, in other words, the speaker may want to give the hearer a piece of advice on helping injured animals. For these reasons, I regard (72) as expressing deontic meaning.

- (73) Ursula Hubener’s states simply that, “without Fritz it wouldn’t have been possible. He translated my plans exactly with such skill and sensitivity.” Before construction could begin, it was **necessary** to excavate deep into the hillside. Ursula was emphatic that the roof should not impinge upon the skyline. (CB, ukmags)

The expression in (73) has an SoA-internal element to it as well. In this case, the circumstances of the building site (being on a hill-side) cause the builders to excavate into the hill-side before they can start building the house. The next sentence makes it clear that the excavations should be deep enough so that the roof of the future house does not impinge upon the skyline. This expression of Ursula’s personal desire weighs out the circumstantial element, and in my view gives the modal expression a deontic interpretation.

tation. The examples (70) to (73) above have therefore shown that in condition-goal structures where there are no formal clues which render the presence of an attitudinal source explicit, we have to take recourse to pragmatic factors to decide between dynamic and deontic meaning.

The discussions of the examples given so far enable us to make some further observations on the nature of deontic and dynamic modality. Whereas Nuyts (2005) argues that deontic utterances are concerned with the moral desirability of propositions, with morality broadly defined, the examples seem to erode the concept of morality. Expressions such as (73) above, for instance, merely involve the personal taste of the attitudinal source rather than ethical considerations. On the whole, the examples analysed as deontic, either with or without a clear condition-goal structure, suggest that a more general definition of deontic modality in terms of desirability does more justice to the data than the narrower definition of Nuyts (2005) referring to ‘moral’ desirability. The discussion of dynamic examples has not affected the definition of dynamic modality, but it has shown that they include two basic types, which are different from the two types of deontic meaning discussed in section 8.3.1, i.e. SoA- and speaker-related meaning. In the first dynamic type, the situational necessity originates in circumstances, which may be, as Depraetere and Verhulst (2008: 6) put it, (i) “(one-off) arrangements or particular situations that necessitate the actualization of a particular situation”, or they may relate to (ii) “the nature of things”, as in (70) and (71). In the second type, the necessity originates in self-imposed systems, such as, for instance, the British parliamentary system in (63). Further examples are given in (74) (see also Introduction and section 2.3) and (75) respectively; example (76) deserves special attention.

(74) This should make you want to go to the toilet frequently. Although it may sting the first few times you go, this usually gets better the more water you pass. It is **essential** to keep emptying the bladder if you are to flush out the germs. (CB, ukephem)

In (74), the condition-goal relation is motivated by the circumstances of the human urinary system: in order to flush out the germs from your bladder, it is necessary to keep filling and emptying it.

(75) In the event of any member of the party changing their name after booking, we or you [sic] Travel Agent must be notified, so that a ticket can be issued in the correct name, as it is **essential** that the initial and the name on the ticket matches those on your passport. (CB, ukephem)

In (75), the necessity derives from the security policy in airports: you are only allowed to board a plane when the initial and the name on the ticket matches those on your passport. Of course, this security system is different from the urinary system in (74), as the first one is one imposed by policy makers, whereas the second is a natural one.

- (76) Thus the great American archeologist William Foxwell Albright justified the slaughter of the indigenous Canaanites by the incoming Israelites in almost neo-fascist terms: “From the impartial standpoint of the philosopher of history, it often seems **necessary** that a people of markedly inferior type should vanish before a people of superior potentialities, since there is a point beyond which racial mixture cannot go without disaster.” (CB, times)

Example (76) shows that a speaker can also use the condition-goal structure to present a particular SoA as necessary on the basis of SoA-internal grounds: it lies in the nature of humankind that if two peoples live in the same territory, the one of markedly inferior type should vanish before the one of superior potentialities. However, the context makes it clear that this necessity is a ‘neo-fascist’ interpretation of a historical fact that can never be justified.

By way of conclusion, I present the relevant subcategories of dynamic and deontic modality in Table 80 below, indicating their frequencies in the sample. It can be seen that deontic expressions outnumber dynamic ones by far, which should be related to the problem of the demonstrability of the attitudinal source discussed above. Still, the figures confirm the conceptual

Table 80. The strong adjectives and their number of deontic and dynamic uses

Adjective	Number of occurrences in the sample	SoA-related deontic uses			Dynamic uses			Total
					Circumstances		Self-imposed system	
		<i>that</i>	<i>to</i>	total	<i>that/to</i>	Presented as such		
<i>critical</i>	12	7	3	10	2	0	0	2
<i>crucial</i>	52	26	21	47	2	0	0	2
<i>essential</i>	200	82	83	165	15	1	12	28
<i>indispensable</i>	2	0	2	2	0	0	0	0
<i>necessary</i>	200	8	121	129	20	4	22	46
<i>needful</i>	21	10	10	20	1	0	0	1
<i>vital</i>	200	117	64	181	8	0	8	16
Total	687	250	326	576	48	5	42	95

hierarchy for strong adjectives proposed in section 6.6, except for the very infrequent adjective *indispensable*.

8.3.5. SoA-related deontic expressions with weak adjectives

Whereas the previous section focused on SoA-related constructions with strong adjectives, for which the analysis in terms of dynamic or deontic modality is not always clear, this section concentrates on expressions with weak adjectives, which simply cannot occur in dynamic expressions. When combined with a mandative complement, they invariably express deontic meaning. I will show that like with strong adjectives, deontic expressions with weak adjectives may have an implicit or explicit condition-goal structure. I will also concentrate on the adjectives expressing convenience, such as *convenient* and *expedient*, which seem to form a semantic subtype of weak adjectives, which shows a preference for *to*-infinitival complements.

All of the weak adjectives in the sample are found in SoA-related deontic expressions. The data suggest that these constructions can be divided into expressions with a clear condition-goal structure and those which do not have a prominent goal, much like the constructions with strong adjectives discussed above. Examples are given below.

- (77) A time order can be applied to both secured and unsecured loans but normally you would try to agree a repayment schedule with an unsecured creditor rather than apply for a time order. If negotiations fail it might be **appropriate** to apply for a time order, especially if you want to avoid having a County Court Judgement (CCJ) entered against you. (CB, ukbooks)

The expression in (77) has an explicit condition-goal structure: it might be appropriate to apply for a time order, especially if you want to avoid having a County Court Judgement entered against you. Note that in this example, the deontic assessment indirectly refers to a self-imposed system, i.e. the legal arrangements on loans and debts. However, the contingency relation between condition and goal itself does not lie in that system, but in the personal stance of the attitudinal source, i.e. the speaker.

- (78) So this morning I want to talk to you a little bit kind of in a general way about preparing to welcome a visitation of God in your life and in your own church. Because a lot of people ask us all the time and they say you know like How do you get ready for this? ... And

and I don't really believe that we have all the answers for that. ... But I do believe there are some common denominators that we've observed over the last year and over other visitations throughout ... history and historical context. And sometimes it's **good** to reflect on those and just encourage our heart and bring a context. (CB, ukspok)

The instance in (78) does not have a condition-goal structure; it is unclear for what purpose it would be good to reflect on the common denominators described, except that is worthwhile for our religious well-being. Hence, SoA-related deontic expressions with weak matrices resemble those with strong matrices in that both may or may not have a clear condition-goal structure. However, unlike with strong adjectives, with weak adjectives the SoA referred to in the condition can hardly be interpreted as a necessary condition to reach the SoA referred to in the goal.

If we look more closely at the set of weak adjectives that are found in SoA-related deontic expressions, we can distinguish a subset of adjectives that express convenience or utility rather than moral desirability or importance. This subset includes *convenient*, *expedient*, *profitable* and *suitable*. Apart from *suitable*, which is attested in the sample with a *that*-clause twice, the adjectives only pattern with *to*-clauses (cf. Table 81 below). Examples are given in (79) to (82).

- (79) THIS week thousands of borrowers will be receiving letters from Abbey National and the Nationwide telling them of the rise in the mortgage rate and asking for standing orders to be increased. Instead of filling out and sending off yet another standing order, it's more **convenient** to pay your mortgage by direct debit. (CB, today)

In (79), the speaker argues that it is more convenient to pay your mortgage by direct debit than by sending off another standing order. In this context, the meaning of *convenient* can be described as 'favourable to your comfort, and hence desirable'.

- (80) C. Bettelheim ... wrote in rebuttal: "The capitalists, who cannot be accused of not knowing how to do their sums, are not deceived: they know that, generally speaking, it is more **profitable** to exploit the proletarians of the industrialized countries than their brothers in the poor countries." (CB, ukbooks)

In (80), the meaning of *profitable* can be paraphrased as ‘favourable to your own profit, and hence desirable’. It is clear from the context that profitability does not always go together with moral desirability: exploiting people is generally regarded as morally unacceptable.

- (81) The human rights organisation, Amnesty International, says abuses of human rights are continuing in more than one-hundred-and-forty countries. In its annual reports, ... Amnesty says people are still being imprisoned for their political or religious beliefs in about half the countries of the world. ... It also says governments in many parts of the world frequently ignore human rights abuses in other countries if it is politically **expedient** to do so. (CB, bbc)
- (82) This kind of hypocrisy, says Amnesty has helped sustain the level of human rights abuses around the world in 1990. One of the points that we are actually making in this annual report is that it’s not the governments that are torturing and killing that are to blame for the violations continuing. But it is the governments that stand back, that decide that they’re not going to say anything because it’s politically **suitable** not to say something. (CB, bbc)

In a similar vein, the SoA assessed as politically expedient and politically suitable (by some countries) in (81) and (82), i.e. ignoring human rights abuses in other countries, is rejected by Amnesty International as morally

Table 81. The weak adjectives occurring in SoA-related deontic expressions

Adjective	Number of occurrences in the sample	Number of deontic uses	Number of SoA-related deontic uses			% of deontic uses	
			<i>that</i>	<i>to</i>	total	relative to sample	relative to deontic uses
<i>appropriate</i>	133	90	5	77	82	61.65	91.11
<i>convenient</i>	33	32	0	31	31	93.94	96.88
<i>desirable</i>	31	31	8	23	31	100.00	100.00
<i>expedient</i>	8	8	0	8	8	100.00	100.00
<i>fit</i>	49	49	0	48	48	97.96	97.96
<i>fitting</i>	37	5	0	5	5	13.51	100.00
<i>good</i>	200	74	3	69	72	36.00	97.30
<i>important</i>	200	193	60	110	170	85.00	88.08
<i>profitable</i>	7	7	0	7	7	100.00	100.00
<i>proper</i>	25	18	3	14	17	68.00	94.44
<i>suitable</i>	5	5	2	3	5	100.00	100.00
Total	728	512	81	395	476	65.38	92.97

unacceptable. In these examples, *expedient* and *suitable* express utility: it is useful for countries not to say anything about the human rights abuses in other countries because such statements may have a bearing on future political relations. We can thus conclude that a specific set of weak adjectives expresses convenience or utility, which can be thought of as desirable, but not always in the moral sense or the politically correct sense.

In summary, Table 81 details the weak adjectives that are found in SoA-related deontic expressions in the sample. It can be noted that the convenience/utility adjectives are fairly infrequent. In any case, together with Table 66, Table 81 confirms the conceptual hierarchy proposed for the weak adjectives in section 6.6. All adjectives that are used in non-modal evaluative utterances are also found in deontic expressions. However, not all adjectives found in deontic expressions are also attested in non-modal evaluative constructions, such as *desirable*, *expedient*, *fit*, *profitable* and *suitable*.

8.3.6. Conclusion

This section has concentrated on the modal categories in the conceptual map, i.e. deontic and dynamic modality. In the first place, I have drawn a distinction between SoA-related and speaker-related deontic constructions. Much like in the domain of interclausal relations (cf. Davies 1979: 146–176; Sweetser 1990: 76–112; Verstraete 2007: ch. 9), expressions of desirability may relate to the outside world or they may be used to serve the speaker's argumentative purposes. Within the set of speaker-related uses, I have proposed a further distinction between text-building uses and the combined pattern of mental focus on a proposition. The first type serves to build arguments, or to specify or justify the organization of a text. It has been defined on purely semantic grounds, as the instances do not share many particular constructional features. The second type, by contrast, qualifies as a partially filled construction in the sense of Goldberg (1995) – like the locative and KAK patterns (see sections 8.1.5 and 8.1.6), with *important* as the model adjective. Its semantic-pragmatic value bears witness to its diachronic relationship with the non-modal evaluative mental focus type discussed in section 8.1.1.

The set of SoA-related expressions with strong adjectives raised an issue that pertains to categorial boundaries in the conceptual map. They showed that it is sometimes hard to decide whether a particular construction expresses deontic or dynamic meaning. Thus, I have built on the conclusion of chapter 6 with regard to the complement relation established in dynamic and deontic constructions, and I have argued that the categories of deontic

and dynamic modality are less dissimilar than has been suggested in the literature. The main reason for this problem of delineation lies in the fact that English does not provide a device to encode the absence of an attitudinal source in the adjectival constructions, so that some examples can in principle be analysed as expressing both dynamic and deontic necessity. This problem was explained by the diachronic development of deontic meaning presented in chapter 4. In that analysis, the change from dynamic to deontic meaning was motivated by subjectification, which is a semantic process without structural correlations. I have therefore proposed a number of pragmatic criteria to distinguish between deontic and dynamic meaning, such as context, extralinguistic knowledge and the speaker's communicative purposes. These were useful for expressions with a clear condition-goal structure especially, as it is these that pose problems in the modal domain of the conceptual map.

Constructions with weak adjectives, by contrast, did not pose a problem of delineation of categories. Even examples with a condition-goal structure are easily recognized as deontic expressions, as the relation between condition and goal cannot be interpreted to reside in circumstances or in a self-imposed system. Thus, these data confirm the validity of the distinction between dynamic and deontic modality. Furthermore, I have identified a small set of infrequent weak adjectives that express convenience and utility rather than moral desirability. This finding ties in with what was observed for deontic expressions with strong adjectives: deontic modality should be defined in terms of general desirability instead of 'moral' desirability, as proposed in Nuyts (2005, 2006).

The distribution of adjectives across the various types of meaning discussed here is summarized in Table 82. The table confirms that the conceptual hierarchies proposed in section 6.6 hold for Present-day English, except for the very infrequent strong adjective *indispensable*. It also suggests that the internal organization of the modal domain in the conceptual map can be visualized as in Figure 23 below. In the next section, it will become clear that deontic modality and directive meaning, the adjacent category on the horizontal axis of the map, have a similar internal organization.

Before moving on to the final section on the categories of the conceptual map, I would like to briefly touch upon the role of a particular matrix finite verb, i.e. *would*. As pointed out in section 2.1, in present contexts *would* only occurs with weak adjectives to express tentativeness. Such matrices with *would* can combine with types of complements that also occur with present indicative matrix finite forms, in which case they express non-modal evaluative meaning. What is special about *would* in such expressions

Table 82. The types of deontic and dynamic meaning and the adjectives expressing them

Adjective	deontic modality			dynamic modality		
	speaker-related		SoA-related	circumstances		self-imposed system
	text-building	mental focus		circumstances	presented as dynamic	
<i>appropriate</i>	+	-	+	-	-	-
<i>convenient</i>	+	-	+	-	-	-
<i>desirable</i>	-	-	+	-	-	-
<i>expedient</i>	-	-	+	-	-	-
<i>fit</i>	-	+	+	-	-	-
<i>fitting</i>	-	-	+	-	-	-
<i>good</i>	+	+	+	-	-	-
<i>important</i>	+	+	+	-	-	-
<i>profitable</i>	-	-	+	-	-	-
<i>proper</i>	+	-	+	-	-	-
<i>suitable</i>	-	-	+	-	-	-
<hr style="border-top: 1px dashed black;"/>						
<i>critical</i>	-	-	+	+	-	-
<i>crucial</i>	-	+	+	+	-	-
<i>essential</i>	+	+	+	+	+	+
<i>indispensable</i>	-	-	+	-	-	-
<i>necessary</i>	+	+	+	+	+	+
<i>needful</i>	-	-	+	+	-	-
<i>vital</i>	-	+	+	+	-	+

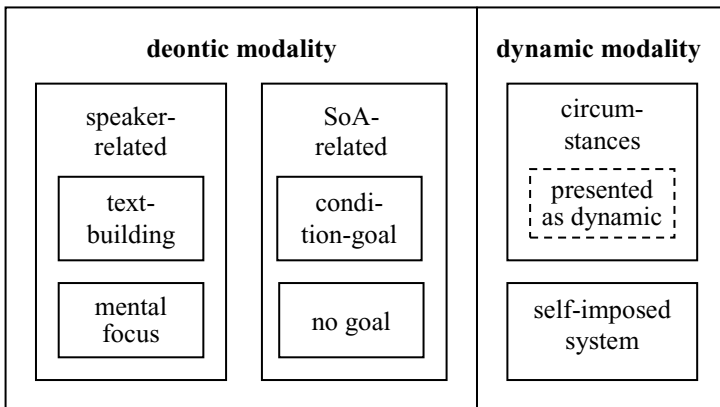


Figure 23. The internal organization of the modal domain

is that it adds a hypothetical flavour to the non-modal evaluative meaning, which seems to trigger a deontic meaning of the construction as a whole. The following examples illustrate this phenomenon.

- (83) But after easily securing provisional pole position in yesterday's first qualifying session for tomorrow's French Grand Prix, Mansell just smiled when he heard Dennis's comments and said: "He's jealous as hell and it's **good** to see the mclaren team rattled. They've been top of the world for four years and they don't like it now that Williams and Renault are doing such a magnificent job." (CB, today)

The expression in (83) is an example of the KAK pattern discussed in section 8.1.5. The speaker expresses his contentment at the defeat of the McLaren team after their four-year hegemony.

- (84) Nonetheless, even with the absence of revenue from fines, the ONN [i.e., Office National de la Navigation, AVL] anticipates raising some ff13-14 million this year alone, although many of us regular users are hoping that it is not destined for the casting off of kindly lock-keepers in favour of persistently non-operative mechanisation. It would be **good** to see the money channelled to recovering disused waterways, or even to establish pay booths in ports of entry. (CB, ukmags)

The expression in (84) has the same constructional make-up as (83), except that it has *would be* as matrix verb phrase, whereas (83) has the present indicative form *is*. This *would* indicates that the SoA of the *to*-clause is not taking place at the moment of speech and hence that the propositional content of the secondary complement has not been actualized either. Rather, it presents the seeing event (and hence the propositional content of the secondary complement as well) as a hypothetical SoA, which can be paraphrased by a subjunctive *if*-clause: 'if we were to see the money channelled to recovering disused waterways, it would be good' (cf. Karttunen [1971: 62], who argues that expressions such as [84] represent an underlying subjunctive conditional, whose antecedent clause is nominalized, in this case into a *to*-clause). Since such a hypothetical SoA has an undetermined factuality status rather than a determined one, I have analysed constructions like (84) as expressing deontic rather than non-modal evaluative meaning. In the

data, the few contrastive pairs like (83)–(84) invariably have a present indicative form and *would* as matrix finite forms.⁹² It may be questioned, however, whether there are other non-indicative tentative expressions that can trigger a deontic meaning of a non-modal evaluative expression as well, such as, for example, *might* or past subjunctive *were*. In any case, more detailed investigation is needed to fully appreciate the status and role of *would* (and other modalized verbs) in present contexts.

8.4. Directive meaning

Directive meaning is distinct from the categories discussed above in that it expresses an illocutionary type of meaning, relating to the interactional function of language, whereas the other categories are conceptual in nature and pertain to the system of qualifications of SoAs. Although this type has been included in the conceptual map, the previous chapters have not focused on it, as its meaning cannot be encoded by the constructions with the adjectives central to this book. Yet, these constructions can be intended or interpreted to express directive meaning, that is, directive interpretation may arise as an implicature (see section 2.2.2). In this section, however, I will concentrate on adjectives that encode directive meaning, namely weak *advisable*, and strong *compulsory*, *mandatory* and *obligatory*, which report on the existence of a recommendation or obligation. These adjectives are thus restricted to descriptive directive expressions in contrast to, for example, imperative forms, which can only be used performatively (cf. Nuyts, Byloo, and Diepeveen 2005). I will show that the two categories on the horizontal axis of the conceptual map share the same internal organization to some extent, since directive expressions – like deontic ones – can have SoA-related uses as well as speaker-related uses (cf. Van linden and Verstraete 2011: 158–160). In addition, I will compare expressions with directive adjectives to those with deontic ones in terms of some constructional possibilities and of the type of action referred to in the clausal complement.

92 In the multiple distinctive collexeme analysis reported on above, the *to*-infinitives were included regardless of the type of their matrix finite form or of the type of meaning of the adjectival constructions as a whole. Within the exhaustive set of *to*-infinitives with *good*, there are two cases of a KAK pattern with *would*, such as (84), and three cases of a locative pattern with *would*. These frequencies are too low, however, to reject the evidence from the collocation analysis for the two non-modal evaluative partially filled constructions with *good*.

It will become clear that the two types of expression differ most considerably in this last respect.

Within the set of directive constructions, examples like (85) and (86) show that the distinction between speaker-related and SoA-related expressions holds for directive adjectives as well (cf. Van linden 2010d). Example (85) instantiates SoA-related use of a directive expression. Example (86) illustrates speaker-related use, which is in fact limited to just one instance in the sample, with weak *advisable*. Internet searches yield more examples, such as (87) with strong *obligatory*, but these are vary rare and arguably of marginal acceptability.

- (85) The Olympus Hike offers a choice of easy low level rambles or more strenuous hikes on the upper trails (3–5hrs a day). If you plan a summit ascent (9570') it is **advisable** to overnight at the mountain refuge. (CB, ukephem)

The directive expression in (85) illustrates the SoA-related use of *advisable*: spending the night at a mountain refuge clearly relates to the outside world. The expression in (86), by contrast, is used to serve the writers' argumentative goals in building a text.

- (86) In our analysis of Cardoso/Faletto and of Frank we have encountered two related but significantly divergent intellectual outlooks claiming the mantle of dependency theory. Before proceeding on our survey of neo-Marxist thought on underdevelopment, it would therefore be **advisable** to formulate a more precise definition of the concept and the theoretical contents of dependency. During the nineteenth century, the condition of dependency referred to colonies of conquest, at least in British usage. To Lenin it referred indistinctly to colonies and so-called semi-colonies, including the Latin American republics, a usage that continued through Comintern congresses and on to Stalinist dogma and propaganda. (CB, ukbooks)

In (86), the directive expression indicates that the writers will first formulate a more precise definition of the concept and the theoretical contents of dependency before they proceed to their survey of neo-Marxist thought on underdevelopment. In this sense, it justifies why the following stretch of discourse lists views on exactly the concept and theoretical contents of dependency.

- (87) It is risky, but probably **obligatory**, to conclude a review of this kind by speculating on the possibilities for ameliorating or curing CF [Cystic fibrosis, AVL]. Beyond the obvious statement that the discovery of the gene will cause an explosion of new understanding, there may be additional hope in the complexity of the protein and the subtlety of its defects. (<http://www.stanford.edu/~wine/basic%20aspects%20of%20CF.pdf>, accessed on 27 Dec 2010)

The directive expression in (87) is found in the final paragraph of a paper on cystic fibrosis (a disease of the exocrine organs), and it is used by the writer to indicate that the main body of the text, i.e. the description of his research, has come to an end. At the same time, the expression motivates the contents of the following discourse. The examples therefore illustrate that like deontic adjectives, the directive adjectives *advisable* and *obligatory* can function on two distinct levels, i.e. an SoA-related and speaker-related level.

Next to the text-building uses, directive adjectives are also used in the other type of speaker-related expressions, i.e. the mental focus construction. No examples are attested in the corpus data, but again Internet searches yield a few relevant hits, like in (88) to (90). Like (87), however, they seem to be of marginal acceptability.

- (88) When deciding on the duration of your function, it is **advisable** to bear in mind that you and some of your guests may have been in attendance since the wedding ceremony in the early afternoon and so this should be taken into consideration when deciding the finishing time. (<http://www.ultimateroadshow.co.uk/weddingdisco.htm>, accessed on 27 Dec 2010)
- (89) In dealing with differences in access to diabetes care, it is **mandatory** to realize that proper care requires not only attention to usual medical needs but also attention to varying needs of support required by minority and immigrant families to access and optimally utilize medical care. (<http://www.ispad.org/FileCenter/ISPAD%20Guidelines%202009%20-%20Ambulatory%20care.pdf>, accessed on 27 Dec 2010)
- (90) *Trouble the water* pays tribute to the creative genius of black folk who have made a tradition of sound and uncommon sense. ... African-American poetry moves into the new public spheres of the twenty-first century. ... It is worthwhile to rediscover how it evolved. It is **obligatory** to remember it comes from a tradition

that, in the words of Margaret Walker, has “remained singularly faithful to the living truth of the human spirit.” (<http://www.nathan.ietfurner.com/troublethewater.htm>, accessed on 27 Dec 2010)

All examples share the same constructional make-up with the deontic examples in (53) to (59) above, with an affirmative present indicative copular matrix finite form and an extraposed *to*-clause containing a cognition predicate and a secondary *that*-clause. The semantic-pragmatic value of the constructions is also very similar to the one proposed for the deontic mental focus expressions: the speaker/writer encourages the hearer/reader to consider the propositional content of the secondary *that*-clause. In fact, the literal compositional meaning even seems unfelicitous, as it is hard to advise or oblige a person to perform a cognitive process such as remembering or realizing, in that you can never verify whether this person has carried out the expected action. In this sense, examples like (88) to (90) lend additional support for the constructional nature of the mental focus pattern proposed for deontic adjectives (see section 8.3.3).

It should be noted that the infrequency and sometimes marginal acceptability of the speaker-related examples suggest that directive adjectives do not sit well with the speaker-related functions. Another contrast with deontic adjectives relates to the types of SoAs referred to in the complements of directive constructions. It is clear from the data that these typically involve fairly practical actions, which may demand some know-how but whose actualization can be checked more or less objectively, as in (85). Deontic expressions, by contrast, sometimes involve rather abstract actions, which may be hard to put into practice and to verify. I repeat here example (68) from section 8.3.4 above.

- (91) Herbert Daniels, the group’s founder, believes that it is **essential** to overcome the social stigma of Aids, which often means that people with the virus lose their homes, jobs and families, and are effectively condemned to death by society. (CB, bbc)

Overcoming the social stigma of Aids may be a very desirable action, but it is not straightforward to think of a concrete step-by-step plan to make it happen. Deontic expressions also often contain cognition verbs, for instance in the speaker-related mental focus construction, which imply a certain degree of abstractness as well. The results from the distinctive collexeme analysis bear out the tendency of directive adjectives to combine with practical actions. In Tables 83 and 84, I present the ten items that are most strongly attracted to the *to*-infinitive slot of the extraposed *to*-infinitive

construction with *advisable*, *compulsory*, *mandatory* and *obligatory*. The tables show that *to*-complements found with directive adjectives designate concrete actions, such as booking, wearing, telephoning, notifying, flying, buying, kissing and driving.⁹³ Of course, deontic adjectives may also combine with such complements, but the main difference here is that they are

Table 83. The collexemes most strongly attracted to the *to*-infinitive slot of the extraposed *to*-infinitive construction with *advisable* and *compulsory*

<i>advisable:</i> distinctive for A (attracted)					<i>compulsory:</i> distinctive for A (attracted)				
Collexeme	Obs. Freq. in A	Obs. Freq. in B	Fisher Yates p-value	Bonferroni correction	Collexeme	Obs. Freq. in A	Obs. Freq. in B	Fisher Yates p-value	Bonferroni correction
book	2	1	2.41E-03	5.29E-02	do	4	49	2.88E-04	6.34E-03
take	4	27	1.10E-02	2.42E-01	notify	1	0	6.54E-03	1.44E-01
check	3	15	1.37E-02	3.01E-01	fly	1	2	1.95E-02	4.29E-01
wear	2	5	1.56E-02	3.44E-01	carry	1	2	1.95E-02	4.29E-01
use	3	18	2.09E-02	4.61E-01	buy	1	3	2.59E-02	1.59E+00
liquidate	1	0	2.88E-02	6.34E-01	refer	1	3	2.59E-02	5.71E-01
induce	1	0	2.88E-02	6.34E-01	deal_with	1	3	2.59E-02	5.71E-01
formulate	1	0	2.88E-02	6.34E-01	leave	1	6	4.50E-02	9.90E-01
soothe	1	0	2.88E-02	6.34E-01	show	1	8	5.75E-02	1.26E+00
telephone	1	0	2.88E-02	6.34E-01	be_noun	1	17	1.12E-01	2.46E+00

Table 84. The collexemes most strongly attracted to the *to*-infinitive slot of the extraposed *to*-infinitive construction with *mandatory* and *obligatory*

<i>mandatory:</i> distinctive for A (attracted)					<i>obligatory:</i> distinctive for A (attracted)				
Collexeme	Obs. Freq. in A	Obs. Freq. in B	Fisher Yates p-value	Bonferroni correction	Collexeme	Obs. Freq. in A	Obs. Freq. in B	Fisher Yates p-value	Bonferroni correction
disclose	1	1	2.62E-03	5.76E-02	give-permiss.	1	0	3.93E-03	8.64E-02
accept	1	4	6.53E-03	1.44E-01	smear	1	0	3.93E-03	8.64E-02
wear	1	6	9.14E-03	2.01E-01	soul-search	1	0	3.93E-03	8.64E-02
					kiss	1	0	3.93E-03	8.64E-02
					drive	1	1	7.84E-03	1.72E-01
					lose	1	2	1.17E-02	2.58E-01
					call	1	2	1.17E-02	2.58E-01
					have_to	1	4	1.95E-02	4.29E-01
					use	1	20	7.96E-02	1.75E+00
					have	0	90	6.97E-01	1.53E+01

93 In the case of *mandatory*, the *to*-clauses also refer to concrete actions, specifically disclosing the sources of all West German intelligence, accepting a certain financial arrangement when you retire, and wearing hats and gloves.

Table 85. The adjectives occurring in speaker-related and SoA-related directive uses

Adjective	Number of occurrences in the sample	Number of speaker-related directive uses			Number of SoA-related directive uses		
		<i>that</i>	<i>to</i>	total	<i>that</i>	<i>to</i>	total
<i>advisable</i>	70	0	1	1	4	65	69
<i>compulsory</i>	17	0	0	0	2	15	17
<i>mandatory</i>	3	0	0	0	0	3	3
<i>obligatory</i>	9	0	0	0	0	9	9
Total	99	0	1	1	6	92	98

typical of directive constructions, while deontic expressions may also involve more abstract actions.

In conclusion, directive expressions, which report on the existence of a recommendation or obligation but do not involve assessments in terms of desirability, manifest SoA-related as well as speaker-related uses, just like deontic expressions (see sections 8.3.1 to 8.3.3). However, speaker-related uses turned out to be very infrequent both in the sample (cf. Table 85) and on the Internet. Significantly, the mental focus examples from the Internet – although they seemed to be a little strange – can be argued to corroborate the constructional nature of the mental focus pattern proposed in section 8.3.3, as the literal meaning of advising or obliging someone to carry out a cognition act seems somewhat unfelicitous. In any case, the data have shown that the internal organization of the directive domain can be represented as in Figure 24, sharing its make-up with that of deontic modality in

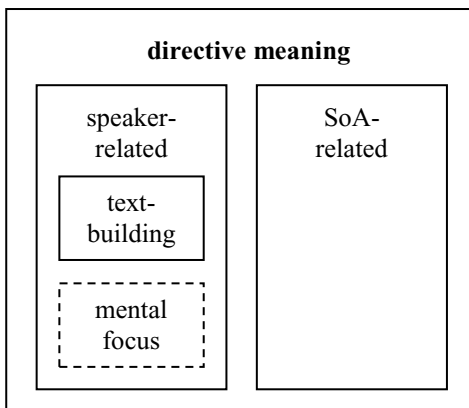


Figure 24. The internal organization of the directive domain

Figure 23 (section 8.3.6) to a large extent. The box of the mental focus use has dashed instead of solid lines because of the nature of the data adduced for it.

8.5. Conclusion

This chapter has synthesized the three-part diachronic analysis (chapters 4 to 6) from a synchronic perspective. It has elaborated on the synchronic validity of the conceptual map, by showing its potential for semantic refinement. Framed by this synchronic synthesis, analysis of Present-day English constructions with modal-evaluative and directive adjectives has indicated the internal consistency of the map, as it was found that the three categories on the vertical axis have different internal organizations, reflecting their different conceptual make-up, whereas the two categories on the horizontal axis show a similar internal structure, which may explain why they have typically been conflated in the literature (cf. section 1.1.2). In the process, I have also discussed the problem of delineation between deontic and dynamic modality, an issue that bears on the basic categorial distinctions in the conceptual map.

The discussions above have presented a typology of extraposition constructions with modal-evaluative and directive adjectives. It has been shown that they can express a variety of meanings and can occur in a number of partially filled constructions, such as the non-modal evaluative locative and KAK constructions, and the deontic/(directive) mental focus construction. The figures representing the internal organization of the various domains above have been integrated in Figure 25 so as to summarize the main findings of this chapter. In Figure 26, I have added the modal-evaluative adjectives (in roman type) and the directive adjectives (in italic type) to the refined conceptual map in order to show how they split it up among each other. The font size of the lexical items corresponds iconically to the frequency of the adjectives in the different constructions. (Note that for the sake of convenience, the SoA-related subcategories do not distinguish between condition-goal structures and structures without an expression of goal.) In general, Figure 26 confirms that the distribution of the modal-evaluative adjectives across the various conceptual categories is motivated in terms of the two semantically coherent lexical classes: weak adjectives (in grey font) are restricted to non-modal evaluative and deontic subcategories, whereas strong ones (in black font) only occur in deontic and dynamic expressions. I have argued in sections 6.4.1 and 6.5 that the use of strong *essential* and *crucial* in the non-modal evaluative mental focus pat-

tern should not be regarded as a counterexample to this overall tendency because of its specific semantic-pragmatic value. Finally, Figure 26 also indicates that the conceptual hierarchies for weak and strong adjectives presented in section 6.6 also apply in Present-day English, except for the very infrequent strong adjective *indispensable*.

In addition to a detailed description of the different types of expressions and constructions, this chapter has also offered insights into the distinction between deontic and dynamic modality. Whereas in chapters 5 and 6 dynamic and deontic expressions are not treated as separate categories, as it is not possible to formally distinguish between them, this chapter has focused on the delineation between the two. Observing that some examples can in principle be assigned to either type, I have invoked the analysis of the development of deontic meaning in the strong adjectival matrix (chapter 4) to explain this problem. The development of the semantic property of relationality together with the process of subjectification suggested that it is the impossibility of demonstrating the absence of an attitudinal source in extrapolation constructions that makes it hard to analyse condition-goal structures as either deontic or dynamic. However, I have also indicated that the problem does not render the distinction redundant. By contrast, dynamic modality keeps its validity as a conceptual category, which is evidenced by the finding that the potential to occur in dynamic expressions is restricted to strong adjectives, which have a component of necessity to their meaning.

Therefore, this chapter also relates to the question of the relative importance of the parameters in the conceptual plane of the conceptual map. The Present-day English data show that neither parameter is without problems. With regard to the parameter of the factuality status of the SoA, which distinguishes between modal and non-modal categories, the sample includes a non-negligible number of bridging contexts between non-modal evaluative and (modal) deontic meaning. With regard to the parameter of the presence or absence of an attitudinal source, which sets apart (situating) dynamic modality from the attitudinal categories, it was noted that the presence of an attitudinal source can never be excluded. Yet, in my view, the problem with the second parameter seems more fundamental than the occurrence of bridging contexts. Such constructions can be interpreted in two ways, but this does not imply that the speaker also intends them to convey two meanings. And even if he or she did so, it is not impossible or unreasonable to evaluate an actualized SoA or event on the basis of SoA-external grounds, and at the same time also to express that it is desirable it should happen again (with the same or another agent, cf. the referential properties of the infinitival subjects discussed in section 8.2). The finding that the absence of an attitudinal source cannot be proven, however, seriously questions the

validity of the second parameter. Therefore, I propose to link it to the difference between the binary and scalar categories in the conceptual map, with which it correlates. As indicated in several places above (e.g. sections 1.2.1 and 8.3.4), the situating category of dynamic modality is binary in nature, whereas the attitudinal categories of deontic and non-modal evaluative meaning are scalar in nature. To decide whether a certain expression belongs to a binary or scalar category, it is useful again to consider the pragmatic elements which have been proposed to determine the distinction between deontic and dynamic condition-goal structures, such as, context, world knowledge and communicative purposes (see section 8.3.4). The twofold second parameter has been included in the conceptual map in Figure 25. All in all, like chapters 5 and 6, this chapter has shown that of the distinctions on the vertical axis of the conceptual map, the distinction between the modal and non-modal categories is the most salient one.

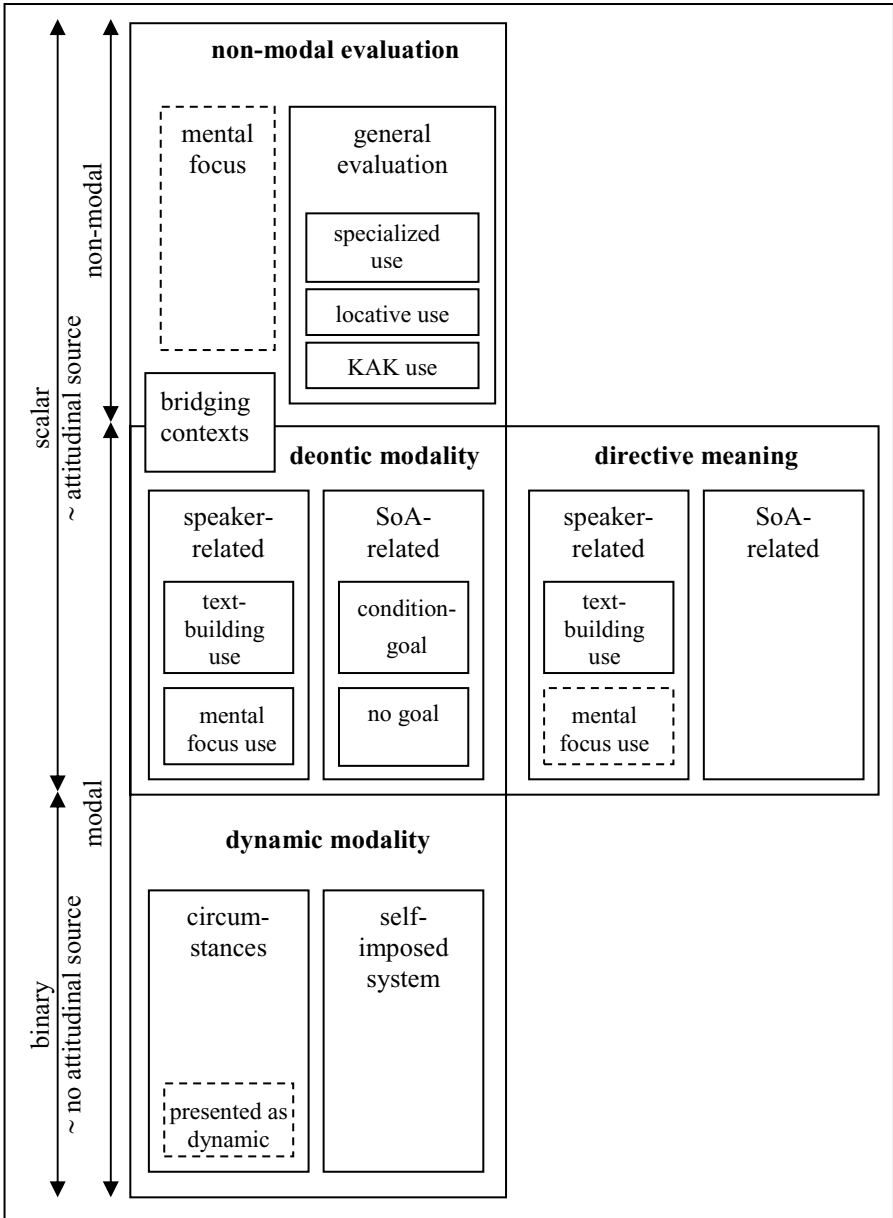


Figure 25. Synchronic refinements of the conceptual map

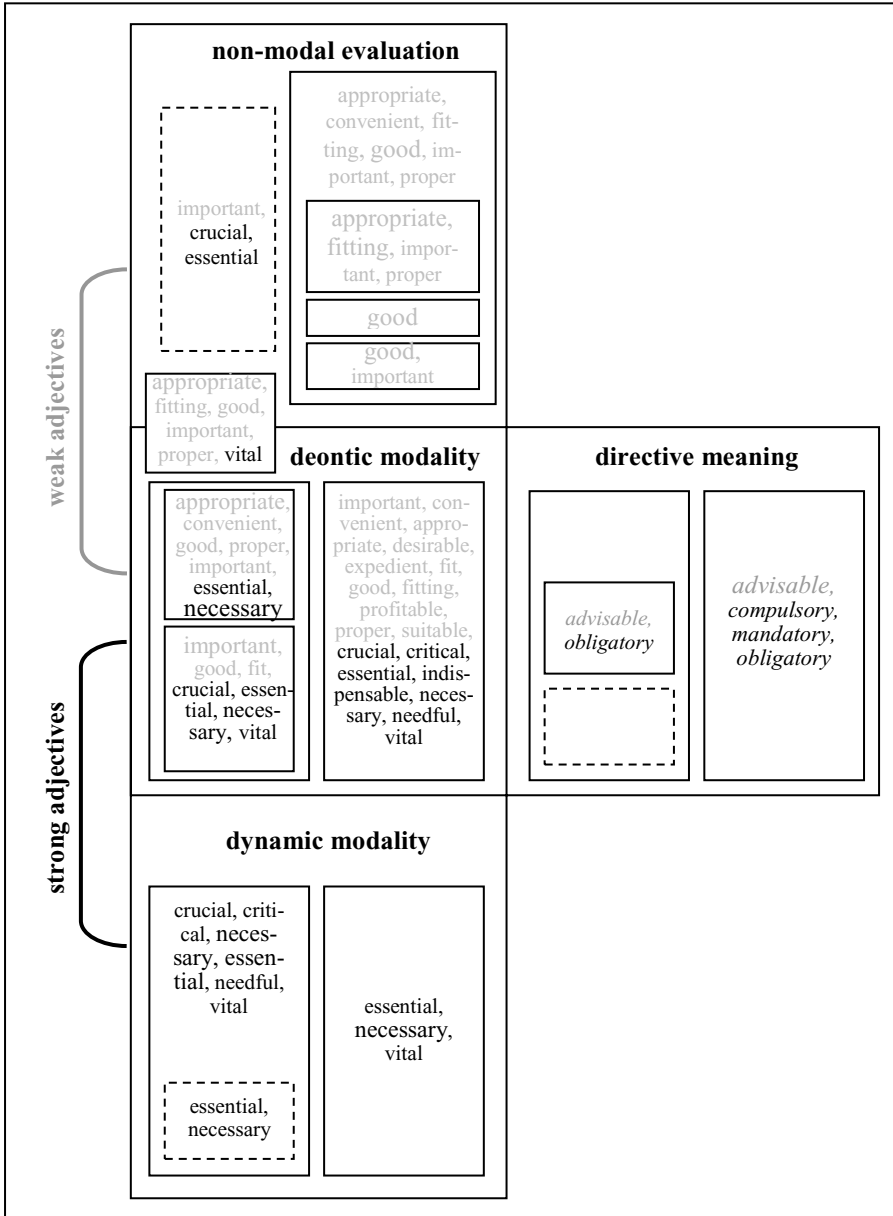


Figure 26. The adjectives in the refined conceptual map

Chapter 9

Conclusion

In this book, I have revisited the notion of deontic modality and conceptually related categories from the perspective of a formal category that has received little attention in this respect, namely adjectives. In the process, I have explored and mapped some largely uncharted areas in the domains of modal-evaluative meaning and complementation. The starting point was the study of extraposition constructions with deontic adjectives like *essential* and *appropriate*. It was shown that the set of meanings associated with deontic adjectives is quite different from the set of meanings identified in the literature on modal verbs. Adjectives lack the directive meanings of obligation or permission, which are traditionally regarded as the core deontic categories, and they have semantic extensions towards dynamic meanings as well as non-modal meanings in the evaluative domain. Moreover, the distribution of the adjectives across these three types of meaning appeared to be determined by their membership in one of two semantically coherent lexical classes, i.e. weak and strong adjectives. As well, correlations were explored between these weak and strong adjectives and semantic and formal complement types. The relevant lexico-semantic and conceptual distinctions were integrated into a conceptual map, which formed the backbone of this book and is repeated in Figure 27.

The major findings reflected in the conceptual map can be summarized as follows. The two lexico-semantic classes of the adjectives central to this study (in black font in Figure 27) manifest different patterns of polysemy in the modal-evaluative domain. Weak adjectives are found in constructions with deontic or non-modal evaluative meaning, whereas strong adjectives are found in constructions with deontic or dynamic meaning. In other words, constructions with weak adjectives can never be interpreted as dynamic expressions, and constructions with strong adjectives cannot express non-modal evaluative meaning.

These findings confirm a number of hypotheses about the partitioning of the modal-evaluative domain. Firstly, in addition to the generally accepted categories of participant-inherent and participant-imposed meaning, the category of dynamic meaning should be taken to include situational meaning (cf. Nuyts 2005, 2006, see sections 1.1.1 and 2.2.1). Dynamic expressions with strong adjectives indicate the necessity of a particular SoA that

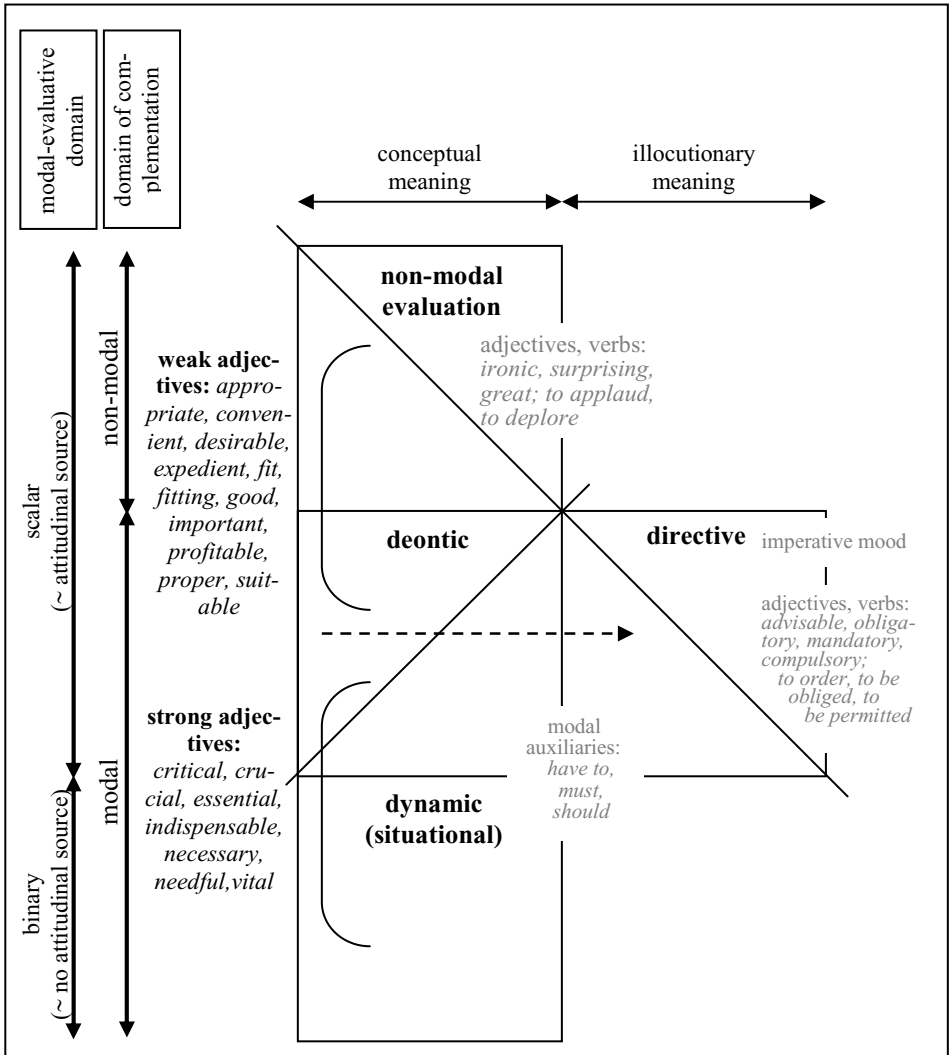


Figure 27. The conceptual map

is internal to that SoA, which is more rightly labelled as situational necessity than as participant-imposed necessity. Secondly, within the set of constructions that involve assessments based on SoA-external grounds, it is essential to distinguish between deontic expressions, which assess the desirability of potential or virtual SoAs, and non-modal evaluative expressions, which assess the appropriateness of SoAs that are presupposed to be true (cf. McGregor 1997: 221–222, 241–243, see section 2.2.2). While the

previous two hypotheses relate to the vertical axis of the map, the final hypothesis focuses on the horizontal axis. More specifically, it is crucial to distinguish between conceptual deontic meaning, involving attitudinal assessments in terms of desirability, and illocutionary directive meaning, comprising acts of obligation and permission, since these pertain to distinct functions of language, i.e. conceptualization versus interaction (cf. Nuyts, Byloo, and Diepeveen 2005, 2010, see sections 1.1.2 and 2.2.2). Whereas expressions like the modal auxiliaries can be used to convey both types of meaning, it is typical of adjectives that they can express only one type. The adjectives central to this book such as *proper* and *essential* are restricted to qualificational expressions (the left area in the map), whereas adjectives such as *obligatory* (in grey font) can only be used in directive expressions (the right area in the map). More generally, therefore, in this book I have argued for a redefinition of deontic modality which is restricted to attitudinal assessments of potential SoAs, thus excluding directive notions like obligation and permission, as well as attitudinal assessments of presupposed SoAs (e.g. Nuyts, Byloo, and Diepeveen 2005, 2010).

In order to make the relations between the conceptual categories in the map more explicit, I proposed two binary parameters which together divide the conceptual area into three spaces. Assuming a definition of modality in terms of factuality, the first parameter distinguishes between modal and non-modal meaning on the basis of the factuality status of the dependent SoA in the adjectival construction. As mentioned above, dynamic and deontic modal expressions involve potential or virtual SoAs, which are characterized by an undetermined factuality status. Non-modal evaluative expressions, by contrast, involve propositional contents whose SoAs are presented as presupposed true, and hence have a determined factuality status. The second parameter pertains to the presence of an attitudinal source and sets apart the attitudinal categories, i.e. deontic and non-modal evaluative meaning, from the situating category of dynamic meaning. Studies focusing on modal expressions as such (e.g. Nuyts 2005, 2006) advanced the parameter of the attitudinal source as making the most salient distinction within the set of constructions studied here (see sections 1.2.1 and 2.3). Insights from the domain of complementation, however, pointed to some problems with this parameter, and emphasized the importance of the parameter of factuality status. In what follows, I will first recapitulate the diachronic and synchronic evidence proposed in favour of (the partitioning of) the conceptual map, and I will then return to the relative importance of its parameters.

In several places, this study produced arguments for the validity of the conceptual map for diachronic analysis. Firstly, a number of case-studies

revealed the diachronic relations between the conceptual categories included in the conceptual map. In chapter 4, studies of the strong adjectives *essential*, *vital*, *crucial* and *critical* indicated that they entered the conceptual map from below: they first developed situational dynamic meaning. In a later stage, they developed deontic meaning through the process of subjectification (Traugott 1989: 35). This dynamic-deontic pathway is very similar to the one proposed for modal auxiliaries such as *can* or *must* (cf. Goossens 1999; Traugott and Dasher: ch. 3). However, the description of the premodal stages offered insights into how the lexical items developed modal meaning in the first place. In this respect, we saw that the development of dynamic meaning crucially depends on the development of two semantic properties, relationality and potentiality, which can therefore be regarded as the conditions of entry into the conceptual map. Moreover, the studies also showed that *essential* and *crucial* even developed non-modal evaluative meaning, as they are found with propositional complements in Present-day English (albeit very infrequently). The studies of the strong adjectives thus pointed to the vertical axis in the conceptual map as defining a diachronic pathway.

This finding was confirmed by a case-study of a set of strong and weak adjectives, namely the importance adjectives *essential*, *crucial*, *important*, and the appropriateness adjectives *appropriate*, *fitting* and *proper* in chapter 6. The case-study showed that these adjectives first patterned with a particular semantic complement type – mandative complements, before they could take another semantic type – propositional complements. In addition, the two classes of adjectives appeared to differ in how they developed the propositional pattern. In the case of the importance adjectives, the single proposition pattern could be analysed as a combined mandative-propositional pattern from which the mandative *to*-clause – typically including a cognition verb, such as *note* or *remember* – was dropped but remained in some sense implied ($A > A[B] > B \rightarrow A$). This development proved to account for the specific semantic-pragmatic value of their single proposition pattern: the attitudinal source does not assess the propositional content in the complement as crucial, but rather encourages the hearer to focus mentally on that propositional content. In the case of the appropriateness adjectives, non-modal evaluative constructions with propositional complements developed from deontic expressions with mandative complements via bridging contexts that contextually support both a mandative and propositional reading ($A > A/B > B$). In the propositional pattern, the attitudinal source evaluates the propositional content as appropriate; construction B thus expresses true non-modal evaluative meaning. In general, the

two pathways sketched above verified that for certain lexical items deontic meaning is diachronically prior to non-modal evaluative meaning.

Generalizing from the diachronic case-studies summarized above, I posited two conceptual hierarchies, for strong and weak adjectives respectively, which apply in both diachrony and synchrony (see section 6.6). Although the case-studies focused on adjectives that came into the English language in the course of or after the Middle English period (i.e. of group C, as defined in section 3.1), the hierarchies are assumed to hold for the whole data set (i.e. also for adjectives of group A and B). They are repeated in (i) and (ii) below.

- (i) The conceptual hierarchy of strong adjectives
dynamic modality > deontic modality
- (ii) The conceptual hierarchy of weak adjectives
deontic modality > non-modal evaluation

Secondly, a closer study of the diachrony of the clausal complement patterns also showed that the lexico-semantic and conceptual distinctions in the map apply across time. In chapter 5, it became clear that from Old English onwards, strong adjectives occur with mandative complements only, whereas weak adjectives are found with both mandative and propositional complements. However, it also turned out that these semantic types of complement do not correlate with the formal types of complement (*that*- and *to*-clauses) on a one-to-one basis. Mandative and propositional complements are coded by *that*- and *to*-clauses from the earliest stages onwards. Interestingly, within the mandative type we noted a shift in the distribution of the formal types. The predominance of *that*-clauses in Old English shifted to a predominance of *to*-clauses in the course of the Middle English period, a development parallel to that of complements of verbs with a volitional element described by Los (2005). This distributional change was explained by syntagmatic and paradigmatic analogy (cf. De Smet 2008: 102–127) with the increased frequency of *to*-infinitives with intention and manipulative verbs in Middle English (Los 2005). Unlike in the case of the verbal matrices (cf. Rohdenburg 1995), however, the replacement of *that*-clauses did not run its full course. From the Early Modern English period onwards, the *to*-infinitive stabilized at roughly a 3:1 ratio to the *that*-clause. This renewed type of clausal variation was linked to lexical determination and discourse factors such as information structure. More generally, the data thus indicated that analogy should not be given too much weight in explaining language change, as within the history of a sin-

gle construction type it may be blocked by other factors, such as lexical determination and discourse factors.

In addition to diachronic evidence, this study also adduced synchronic evidence for the conceptual map. The in-depth investigation of Present-day English constructions, reported on in chapter 8, proved its synchronic validity by indicating its applicability and internal consistency. It proposed refinements of the conceptual and illocutionary categories in the conceptual map, which are in keeping with its general conceptual and lexico-semantic distinctions discussed above. Essentially, it showed that the categories on the vertical axis of the map have a different internal organization, reflecting their different conceptual make-up, whereas the categories that are adjacent on the horizontal axis feature the same internal structure – to a certain extent, which may explain why they have typically been conflated in the literature (cf. section 1.1.2). In particular, it became clear that the distinction between SoA-related and speaker-related uses, which has been observed for the domain of interclausal relations as well (cf. Davies 1979: 146–176; Sweetser 1990: 76–112; Verstraete 2007: ch. 9), is relevant to the deontic and directive domain, but not to the dynamic and non-modal evaluative domains. With respect to deontic and directive expressions, SoA-related uses refer to actions in the outside world (e.g., *it was appropriate to prescribe tranquilisers freely* [CB, ukmags]), whereas speaker-related uses refer to the speaker's argumentative goals (e.g., *it would be appropriate to conclude this section ...* [CB, ukbooks]). One speaker-related subtype was analysed as a partially filled constructions in the sense of Goldberg (1995), namely the mental focus construction. The same analysis was assigned to the non-modal evaluative locative and knowledge/acquisition of knowledge (KAK) constructions. However, not all subtypes in the proposed typology correlated with clear constructional patterns that are (getting) entrenched in Present-day English (cf. Hopper's [1987, 1998] Emergent Grammar). On the basis of the detailed study, it was possible to locate each of the adjectives studied within the finer subcategories of the conceptual map (section 8.5, Figure 26). The result generally verified the conceptual hierarchies for the two lexico-semantic classes of adjectives.

At the same time, the study of the synchronic validity of the conceptual map also substantiated and synthesized the findings on the relative importance of the two parameters in the conceptual map. When equating the matrices of dynamic, deontic and non-modal evaluative constructions with Noonan's modal, modal/desiderative and commentative complement-taking predicates respectively (cf. Noonan 2007: 127–139), insights from the typological literature on complementation indicated that in terms of types of complement relation, the parameter of factuality status or the distinction

between modal and non-modal categories is much more salient than the parameter of the presence of an attitudinal source (see section 6.2.1). This finding was supported by the problems encountered in trying to categorize Present-day English examples of SoA-related constructions with strong adjectives. Whereas the diachronically oriented chapters 5 and 6 did not treat dynamic and deontic expressions as separate categories, as it is not possible to formally distinguish between them, the synchronic study in chapter 8 found that some examples can in principle be assigned to either dynamic or deontic modality. This problem of delineation was explained in terms of the process of subjectification that links them diachronically: the development of deontic meaning is a purely semantic change, which does not correlate with a clear difference in the formal properties of the complement (see chapter 4). It was shown that it is the impossibility of demonstrating the absence of an attitudinal source in the constructions with strong adjectives that makes it difficult to analyse them as either dynamic or deontic. The development of the semantic property of relationality (see chapter 4) made it clear that the delineation problem appears with condition-goal structures especially. However, I also maintained that, in spite of the problem of delineation, dynamic and deontic modality remain valid categories. Since these two categories essentially differ from one another in having a binary versus scalar conceptual make-up, I proposed to link the parameter of the presence of an attitudinal source to a parameter that separates binary from scalar categories (cf. Figure 27), which is conceptually less problematic. To decide whether a certain expression belongs to a binary or scalar category, it proved useful to consider a number of pragmatic elements, such as context, world knowledge and communicative purposes of the speaker.

The discussion of the relative salience of the parameters on the vertical axis in the conceptual map shows conflicting views between the two domains covered in this book, i.e. the modal-evaluative domain and the domain of complementation. Insights from the domain of complementation identified the distinction between modal and non-modal categories as the most salient one. Insights developed in the domain of modal-evaluative meaning (e.g. Nuyts 2005, 2006), by contrast, regard the distinction between attitudinal and situating categories (or non-modal evaluative and deontic meaning as opposed to dynamic meaning) as the only relevant distinction in the map. In Figure 27, the two domains have been added right above the parameter which they highlight as most salient. Interestingly, in their conflict these two domains actually support the three-way contrast among the conceptual categories on the vertical axis of the map, not as a pair of isomorphic three-way distinctions, but as a pair of cross-cutting binary ones. More generally, this category mismatch suggests that the two do-

mains covered in this book are of a different nature, and provide non-complementary perspectives on the same phenomenon. In any case, the major findings of this study summarized above show that they clearly cross-fertilize one another.

The fact that the conceptual map covers two domains of a different nature implies that it opens up two avenues for further reflection. With regard to the modal-evaluative domain, for instance, it can be questioned to what extent the conceptual map proposed here can be considered a semantic map, “a geometric representation of meanings or, if one likes, uses, and of the relations between them” (Van der Auwera and Plungian 1998: 86). Semantic maps, like the map of modality proposed by Van der Auwera and Plungian (1998), are often used in typology: they depict and constrain how genetically and areally diverse languages split up a particular semantic/conceptual space among their lexical and/or grammatical items, both with respect to diachrony and synchrony (Van der Auwera and Plungian 1998: 86; Haspelmath 2003). The discussions above suggest that the conceptual map shows some but not all characteristics of a semantic map. Like a semantic map, it is valid for diachronic analysis in that it accommodates pathways of change for specific lexical items and constructions. In addition, it also holds synchronically in that the component elements meet the adjacency requirement: in the map, the distinct meanings or uses of the adjectives (and modal auxiliaries) are adjacent (cf. Van der Auwera and Plungian 1998: 112). However, the conceptual map is not a genuine semantic map in that it is not assumed to have universal relevance. It has been designed on the basis of English data, and evidence has been adduced for its language-specific validity, but it has not been examined cross-linguistically. In this sense, the organization of the map suggests questions for further research: it may be interesting to take the conceptual map into typology and investigate whether it also applies across languages. In this perspective, the semantic properties of relationality and potentiality proposed in chapter 4 seem promising. They may be helpful in tracing items across languages that qualify for a typological study of the conceptual map, especially items like adjectives or nouns. However, it might also be revealing to study the premodal stages of modal auxiliaries in more detail, and see whether the two semantic properties apply to the verbal category as well. In addition, the features can be used to distinguish various stages in the semantic development from premodal to modal. Thus, together with the semantic descriptions of the different categories in the conceptual map, the properties of relationality and potentiality may form a starting point for the typological research that is needed to turn the conceptual map into a genuine semantic map in the traditional sense.

With regard to the domain of complementation, the very use of the term ‘complementation’ for the constructions included in the conceptual map warrants further reflection as well. It may be questioned what type of elements are linked in the constructions and what type of syntagmatic relation holds between them. Traditionally, in the extraposition constructions (ECs) *that*- and *to*-clauses are viewed as extraposed arguments of the matrix predicate, i.e. as subjects in the case of copular or passive transitive ECs, or objects in the case of active transitive ECs (cf. Quirk et al. 1985: 1224–1225, 1230, 1391–1393; Biber, Johansson, and Leech 1999: 155, 672–674, 720–722, Huddleston and Pullum 2002: 1252–1254) (see section 5.1). Likewise, the constructions also fall under the rubric of ‘complementation’ in the typological account proposed by Noonan (2007), which is defined as “the syntactic situation that arises when a notional sentence or predication is an argument of a predicate” (2007: 52). Cristofaro (2003: 95–98) goes against this traditional constituency analysis, arguing that it is untenable in a cross-linguistic perspective: not all languages express complement relations by means of embedded clauses which function as a nominal constituent of the main clause. Instead, she proposes what she calls a ‘functional’ definition: “complement relations link two SoAs such that one of them (the main one) entails that another one (the dependent one) is referred to” (2003: 95). Even if her definition is cross-linguistically adequate, it remains imprecise in both semantic and syntagmatic terms.

An alternative proposal that aims to be more generally applicable and offers a more detailed description has been formulated in Semiotic Grammar (McGregor 1997). McGregor (1997: 210, 242 [6-50]) argues that in expressions such as *it was good that you came* (i.e. a non-modal evaluative construction in my analysis), the clause *it was good* encompasses and “shapes” the clause *that you came* in that it attitudinally modifies the content of that clause. He identifies the syntagmatic relation between these two units as a whole-whole relationship (or ‘conjugalional’ relationship in his own terms), rather than a traditional part-whole or constituency relationship, in which one clause is analysed as a part or a constituent of another clause (McGregor 1997: ch. 6).⁹⁴ The more specific type of conjugalional relationship involved here is one of scoping: the scoping clause (*it was*

94 This whole-whole relation thus links two clauses, rather than a clause and a predicate. In fact, conjugalional relationships obtain between the “enclosed unit” and the unit consisting of that enclosed unit together with “what encloses it” (McGregor 1997: 210). For the sake of convenience, the two units are referred to as the enclosed and enclosing unit (or more specifically, as the “scoped” and “scoping” unit [McGregor 1997: 240]).

good) modifies the scoped clause (*that you came*), “leaving its mark on the entirety of this domain” (McGregor 1997: 210), in this case indicating the speaker’s attitude towards it. The two types of attitudinal modification proposed in McGregor (1997: 221–222, 241–243) also correspond nicely to the two types of attitudinal meaning proposed in this book: McGregor’s evaluative modification captures what is expressed by non-modal evaluative constructions, such as *it was good that you came*, whereas his desiderative modification corresponds to the meaning of deontic constructions, such as *it would be desirable for you to stop swearing in front of the children* (McGregor 1997: 242 [6-56]). It is less clear, however, how the dynamic constructions studied here should be treated in terms of this analysis. I presume that they involve a conjugational relationship of scoping between two clauses as well, though the type of modification is not attitudinal but rhetorical (“indicating how the unit fits into the framework of knowledge and expectations relevant to the interaction”) (McGregor 1997: 210), more precisely status modification, indicating the speaker’s evaluation of the status of a clause in terms of polarity, modality and/or mood (1997: 224–232).

In addition to its intrinsic interest for the complex constructions studied here, the analysis of scoping may also be more useful than the traditional constituency analysis in other respects, for instance in accounting for the speaker-related text-building use. Below, I repeat example (52) from section 8.3.2. In this example the deontic construction is used to express the speaker’s general idea that if we want to appreciate the nature and extent of Davies’s alleged criminal coup discussed in the previous discourse, we have to understand Japan’s position in the coin world.

- (1) And throughout the coin world, the jovial Paul Davies has proved a man of his word, respected on the coin circuits of Europe, America and Japan. Yet Davies’ sterling reputation has been repeatedly called into question during his attempts to recover 1,000 Showa gold coins he supplied to the Nihonbashi branch of Fuji Bank, as well as more than 3,000 others which were subsequently seized, and his friendly disposition has been sorely tested as he has tried to reclaim what he regards as rightfully his. It is, in many ways, a very Japanese affair. It involves fear of losing face, bureaucratic bungling and a distrust of foreigners. It involves the Japanese Ministry of Finance, the Tokyo Metropolitan Police and, most extraordinarily, the possibility that, like some latterday Goldfinger, Davies found the capital and clandestine resources to counterfeit no fewer than 107,000 twenty-ounce gold coins. It has cost Japan over & pound; 1.6 billion in lost coin sales and refunds to collectors. But,

three years after the scandal first broke, no crime has been established and no charges have been brought. To appreciate the nature and extent of Davies' alleged criminal coup, it is **necessary** to understand Japan's position in the coin world. By the mid-Eighties the Japanese had established their ability to earn money, yet they remained relative novices in the making of artful currency. Of course, the Japanese Mint Bureau's main Osaka Mint, along with its branches in Tokyo and Hiroshima, produced quality everyday legal tender, but the minting of gold coins had not been attempted in the country since 1927. (CB, ukbooks)

Importantly, the deontic expression does not merely justify the immediately following clause, but also the subsequent ones – in fact, the remainder of the paragraph focuses on the history of Japanese coins. In other words, the discourse following the *to*-clause associated with the deontic expression elaborates on the contents of this *to*-clause. This type of discursive situation can be captured more easily in a scoping analysis than in a traditional constituency analysis. In the constituency analysis, the *to*-clause functions locally as an argument of the matrix predicate, in a part-whole relation, and there is nothing in the syntactic analysis to suggest that it could take up wider discourse functions. In the scoping analysis, by contrast, the *to*-clause is analysed as a whole that is modified by another whole, which explains more easily why it can take up both more local functions, as in its standard uses, and more global ones, as in the text-building functions where the *to*-clause projects the rest of the paragraph.

More generally, the scoping analysis also deserves further attention because it offers a unified syntagmatic account of various formal types of expressions that convey similar meanings. Previous studies, for example, have shown that the scoping analysis also holds for the English modal auxiliaries (Verstraete 2007: ch. 3). McGregor (1997: ch. 6) himself uses expressions of various parts of speech in his scoping examples, such as adverbs (*fortunately*), adjectives (*good, desirable*), and verbs (*wish, want*). Interestingly, he also assigns a scoping analysis to clauses associated with nouns (1997: 250–251), which show a formal distinction between *that*-clauses and *to*-clauses as well (cf. [2]–[3] versus [4]).

- (2) I foresaw the **possibility** that they would follow his dripping blood until nightfall. (McGregor 1997: 250 [6-75])
- (3) The **fact** that you have been there does not impress me in the slightest. (McGregor 1997: 250 [6-76])

- (4) Most women don't feel the **need** to become a mother until something goes wrong in their career or life – and then having a baby is the way out. (CB, today)

In the literature, there is disagreement on how to analyse the *that*- and *to*-clauses underlined in the examples above, for example as (noun) complement clauses or as appositional clauses (cf. Schmid 2000: ch. 1). An analysis in terms of constituency, for instance, assumes a parallel between these noun constructions and complex constructions with verbal or adjectival matrices. However, nouns that do not have a verbal or adjectival counterpart, like *fact* in (3), pose serious problems to such a constituency analysis, because they cannot be related to any element that has valency. A scoping analysis, by contrast, can easily generalize across such cases, because it does not assume constituency relations to be the basis of these constructions. It is one of the merits of the scoping analysis that it captures the formal and semantic parallels between complex constructions involving nouns on the one hand and verbs or adjectives on the other in terms of one and the same syntagmatic relation. In this perspective, the scoping analysis suggests one further way to expand the analysis proposed in this book. The formal and semantic parameters distinguished in the study of adjectives could also be used as a framework to study comparable constructions with nouns, regardless of whether they have adjectival counterparts or not.

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