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Dynamic, deontic and evaluative adjectives and their clausal complement patterns: A synchronic-diachronic account

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Abbreviations used in the glosses

2	second person
3	third person

comp	complementizer
dat	dative
dem	demonstrative
gen	genitive
ind	indicative
inf	infinitive
nom	nominative
past	past tense
pres	present tense
pron	pronoun
prt	particle
rel	relative
sg	singular
subj	subjunctive

Introduction

This study investigates how adjectives function in the domain of **deontic modality** and related conceptual categories, and how these adjectives pattern with clausal complements. It concentrates on complex constructions with adjectives such as *essential* and *appropriate* in the matrix, as shown in (1) and (2) below.

(1) He proposed a new constitution for India, which would provide for semi-independent states, each with the ability to introduce their own economic plans. The states would have the power to tax, if not the power to issue their own currencies. 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. You tot everything up and, like mounting endorsements on a driving licence, 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)

In (1), the speaker says that it is highly desirable that the money in India is better distributed, so that ultimately the poorest people can also have a say in political matters. In (2), the speaker says that in some cases it may be appropriate not to forgive or forget the shortcomings of a friend. Thus, in these examples a particular person, who will be called the 'attitudinal source' henceforth, assesses the **desirability** of a particular State of Affairs (SoA),[2] without, however, imposing an obligation or granting permission. In (1), for example, the speaker does not have the authority to order a better distribution of the money in India; he merely expresses his attitude towards this SoA, arguably on the basis of his moral beliefs. In the literature on modality, which has mainly focused on modal auxiliaries such as *can*, *should* or *must*, deontic modality has generally been defined in terms of obligation and permission (e.g. Lyons 1977: 823–841; Palmer 1979: ch. 4, Van der Auwera and Plungian 1998: 81). However, these adjectival constructions show that it is useful to distinguish between attitudinal assessments such as (1) and (2), and acts of obligation or permission which may be inspired by them. In keeping with Nuyts et al. (2005), I will argue in this study that deontic modality should be thought of as a qualificational category covering these attitudinal assessments, while obligation and

[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 chapter 2, section 2.2.

[2] The term 'State of Affairs' is used here to refer to any type of situation, viz. event or state, which can be evaluated in terms of its existence.

permission are illocutionary notions including directive speech acts. This distinction between deontic and directive meaning will be discussed in chapter 1, which presents a theoretical introduction into the domain of modality.

Adjectives such as *essential* and *appropriate* can not only be used to express desirability of SoAs as in (1) and (2); they are also found in **conceptually related expressions**, illustrated in (3) and (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, ukepehm)

(4) The system offers callers confidentiality and accepts calls day or night and weekends too. <p> Latest <p> "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)

In (3), the construction with *essential* does not express a moral necessity as in (1), but rather a necessity that originates in the physical make-up of the human body. The only way to flush 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, as it does not render a personal opinion, but a natural law-like truth. In the present study, this type of circumstantial necessity is taken to express 'situational **dynamic**' necessity (cf. Nuyts 2005, 2006). The construction with *appropriate* in (4) clearly does not express situational necessity; yet its meaning is still different from that in (2). Whereas in (2), the speaker talks about not forgiving or forgetting as virtual or potential SoAs, the SoA assessed in (4) has a different factuality status. More precisely, the SoA is not virtual: at the moment of speech, the IT consultancy is taking the initiative and is using the latest IT technology. The next sentence justifies that 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 *approporiate* can be divided into two types, viz. deontic expressions such as (2) and what will be called '**non-modal evaluative**' expressions such as (4). Thus, the examples in (3) and (4) show that – in addition to deontic meaning, cf. (1) and (2) – adjectives such as *essential* and *appropriate* can express conceptually related meanings, such as situational dynamic modality and non-modal evaluative meaning.

The finding that certain linguistic devices can express multiple meanings within or partly beyond the modal domain is not a new one. In the literature on modality, the polysemous nature of modal auxiliaries has received considerable attention (e.g., Coates 1983, Palmer 1979, Sweetser 1990). However, in these accounts no mention is made of the type of meaning expressed by the adjectival construction in (4). In general, modal verbs like *can* or *must* can express dynamic and deontic meaning, but they cannot be used to express non-modal evaluative meaning. Therefore, this study of adjectives establishes a **new type of polysemy** within the modal-evaluative domain. Moreover, the conceptual

categories expressed by the adjectival constructions, which can be grouped under the label of non-epistemic modality, are not uncontroversial at all. In chapter 1, section 1 I will show that different authors have proposed different definitions and groupings of dynamic and deontic modality. I will argue that, on the basis of a close investigation of dynamic, deontic and non-modal evaluative expressions, it is possible to come to a better understanding of the semantic structure of the non-epistemic modal domain.

Going back to the examples above, it is crucial to note that not all adjectives studied can express the three types of meaning discussed so far. Adjectives such as *essential*, for instance, which express a strong degree of desirability in the deontic domain, are found in situational dynamic expressions as well (cf. (3)), but they do not occur in non-modal evaluative expressions. Adjectives such as *appropriate*, by contrast, which express a weak degree of desirability in the deontic domain, 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, viz. **weak and strong adjectives**, as these manifest different patterns of polysemy in the deontic and related conceptual domains. I will show that the conceptual and lexico-semantic distinctions introduced here can be integrated into what I will term a 'conceptual map', which constitutes the model that will structure the rest of this study.

This study is not restricted to adjectival constructions in Present-day English, but it explores historical data as well. Examples (5) and (6) show earlier expressions with the strong adjectives *essential* and *vital*.

(5) Heate is the **essentiall** propertie of fire (OED 1620 Granger, *Syntagma 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 nutritional blood, where the vessels pulsatiues be lightly hurt (PPCEME 1548 Vicary, *Anatomy*)

The examples above do not express 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'. Taking a closer look at the **semantic development** of a set of strong adjectives, we will see that the first modal meaning developed is that of dynamic modality, which further subjectifies into deontic meaning. This path of change has been observed for modal auxiliaries as well (cf. Goossens 1983, 1999; Bybee et al. 1994; Hansen 1998, 2004; Traugott and Dasher 2002: ch. 3). However, I will show that the stages leading up to dynamic meaning differ very clearly from those described for modal verbs. More particularly, they involve the development of two semantic properties, viz. 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 semantic development of strong adjectives will be discussed in chapter 3, including four case-studies. These studies thus reveal the nature of the pre-modal stages as well as the diachronic relation between dynamic and deontic modality with adjectives.

In addition to the conceptual domain of modal-evaluative meaning, this study also covers the domain of **complementation**, in that it investigates how the distinctions made in modal-evaluative domain correlate with clausal complements patterns. The literature on the domain of complementation is also strongly biased towards complementation with 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/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. I will show that from the perspective of complementation, complements of dynamic expressions such as (3) and (8) are very similar to – and in fact 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. In any case, the examples above have indicated that the formal distinction between *that*- and *to*-clauses cross-cuts the semantic distinction between mandative and propositional complements. In chapter 4, it will become clear that this situation also holds in diachrony.

Even if all combinations of semantic and formal type of complement are constructionally possible, some of them are more marked than others. In this study, 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). The diachrony of the clausal complements patterns will be discussed in chapters 4 and 5.

More detailed analysis of the clausal complement constructions shows that even within the same combination of semantic and formal complement type, a number of **finer distinctions** can be made, for instance between examples such as (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, ukbooks)

(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)

Both examples pattern with an extraposed *to*-infinitive and have deontic meaning. However, this deontic meaning seems to function at two different levels. In (9), the speaker says it is important that the hearer should resolve his/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/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. In fact, 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 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). More generally, the large quantity of synchronic data allows us to draw finer distinctions within the general conceptual categories included in the conceptual map, some of which are constructionally motivated. I will report on this more fine-grained analysis in chapter 6.

The discussion of the topics introduced above and treated 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 syntax-lexicon 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 5).

The discussion has been organized as follows. Chapter 1 presents the literature on modality and associated categories, and relates insights from this domain to the adjectival constructions that are central to this study. In addition, it incorporates the lexico-semantic and conceptual distinctions introduced above into the conceptual map. It also presents a more detailed outline of this study, specifying how each chapter links up with the conceptual map. Chapter 2 concentrates on the data and methods used in this study, especially in the more data-oriented chapters 3 to 6. Chapter 3 details the diachronic development of the adjectives towards (parts of) complement-taking matrices, by means of four case-studies. Chapters 4 and 5 also have a diachronic perspective, but they focus on the clausal complement patterns rather than on the matrix. Chapter 4 presents a general account, looking at the origin, development and distribution of the various complement types, whereas chapter 5 presents two specific case-studies. Chapter 6 has a synchronic perspective and concentrates on the constructional wholes of matrix and complement. In particular, it proposes refinements of the conceptual categories of the conceptual map. The overall conclusion, finally, recapitulates the major findings of this study and formulates some questions for further research.

Chapter 1
Adjectives in the modal-evaluative domain

This chapter is a theoretical introduction to the study of how adjectives function in the domain of non-epistemic modality. It comprises two main sections. In the first section, I will discuss the wide-ranging literature on modality, and distill the notions that are useful to my study. More precisely, I will first focus on the basic categories that are traditionally regarded as constituting the modal domain (section 1.1), viz. dynamic, deontic and epistemic meaning. As this tripartite division is not the only view on modality proposed in the literature, I will also present some alternative organizations of the modal domain. Second, I will elaborate on the relations between these basic categories (section 1.2), viz. conceptual, formal, diachronic and ontogenetic relations. Especially the relations between dynamic and deontic modality are of interest to this study, and I will thus focus on the parameters with regard to which they are different. Third, I will discuss some categories that are not systematically included in the modal domain (section 1.3). Among these categories 'at the modal edge', volition and evaluation stand out as important notions to this study.

In the second section, I will concentrate on adjectives as a specific category of expressive devices within the domain of non-epistemic modality. After a short introduction to the adjectives studied here (section 2.1), I will discuss the various conceptual types of constructions in which they are used (section 2.2). In particular, the adjectives are found in dynamic, deontic and evaluative constructions, and it will become clear that the distribution of the adjectives across these semantic types is lexico-semantically determined. In this subsection, I will show that the adjectival data offer arguments in support of some of the conceptual distinctions presented in section 1. However, I will also make it clear that the data call for a redefinition of deontic modality and a sharper delineation of modal and evaluative meaning. Finally, the theoretical discussion of the conceptual structure of the modal-evaluative domain is summarized into a conceptual map, which forms the backbone of this thesis (section 2.3). It represents the basic conceptual distinctions that are at work in the constructions with adjectival matrices, and also includes the lexical arguments corroborating these distinctions. It will also become clear that the corpus studies presented in the next chapters each provide additional arguments for the validity of the map.

1 The notion of modality

This section provides a theoretical introduction into the various modal categories employed in this study. As such, it obviously incorporates insights into modal meanings as they emerge from the study of modal auxiliaries – probably the best-studied grammatical category encoding modal meaning. At the same time, it is set up such that it also accommodates modal meanings expressed by open-class lexical items, and especially adjectives. In this respect, a good deal of attention in this introduction will go to Nuyts's

fine-grained categorization of the modal domain (Nuyts 2005, 2006), as it provides many valuable insights that are useful for the description of adjectives studied here.

In the literature, the term 'modality' has been used in both 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, and it is these that I will survey in this section.

More specifically, this section will only be concerned with the category of modality in its narrow sense. I will first discuss the modal domain in terms of its basic or core categories, viz. dynamic, deontic and epistemic meaning (section 1.1). 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. I will then look at alternatives to the traditional three-way division. In section 1.2, I will focus on the relations between the three basic categories, and I will discuss how these can be linked to the different groupings of modal categories proposed in the literature. Finally, I will turn to a number of categories situated at the 'edges' of the modal domain (section 1.3).

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 sections 1.1.1 to 1.1.3, I will examine the categories commonly considered to make up the core of modal meaning, viz. dynamic, deontic and epistemic (with or without evidential) meaning. In section 1.1.4, I will look at alterative 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*.[1] The term has found general acceptance and is used in, amongst others, Palmer (1979, 1983, 1986), Perkins (1983), Plank (1984), and Nuyts (2005, 2006). Other terms for this type 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 examples.

(1.1) 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)

(1.2) 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 – in fact we have often been able to help by taking in their animals which would otherwise have been destroyed. (CB, ukephem)

(1.3) It is **possible** to crop cauliflowers over a number of months, by growing them under polythene or cloches using the varieties already mentioned. The same four can also be sown a little later in an outdoor seedbed. (CB, ukmags, Amateur Gardening, 17/07/1993)

In example (1.1), 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 (1.2), in which 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. In example (1.3), finally, 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

[1] Von Wright acknowledges his colleague philosopher G. T. Geach for the term *dynamic modality* (1951b: 28).

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). More specifically, 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).[2] 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, presented below.

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 (1.1) above. Example (1.4) illustrates a participant-inherent need.

(1.4) Thus we sat there with the clock ticking away and talked about ghosts and Danish bog corpses and about the possible existence of terrible monsters on strange planets, until the 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 the first-argument 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 (1.2) above. Example (1.5) below involves a participant-imposed inability. In particular, 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.

(1.5) We do clear the site before we leave, so we know that boys cannot have left equipment where the tents were. […] 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

[2] See Nuyts (2005: note 33) on the problems of regarding dynamic modality as involving a scale rather than two values.

2006: 4). Such expressions thus go beyond the first-argument participant, and may not involve a participant at all, as in example (1.6). In example (1.3) above and (1.7) below, the first-argument participant is left implicit due to the syntactic construction used, viz. the extraposition construction.

(1.6) The alternative is the verdant, Atlantic-facing north, where it **can** rain although it does so pretty warmly. (CB, times)

(1.7) 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 (1.6), the potentiality of rain is inherent in the meteorological properties of Spain's northern coast, the region discussed in this excerpt.[3] Another example of situational possibility (with an implicit participant, however) has been given in (1.3) above. In (1.7), 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 (1.3), the example can be paraphrased in terms of condition and goal: advancing in the first part of the trip in conditional upon moving doubled-up. It can thus be concluded that the possibility/necessity 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.[4] Nuyts acknowledges possible ambiguity within the dynamic domain (Nuyts pc). Consider the example given in (1.8).

(1.8) 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 (1.8), 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

[3] The analysis of (1.6) 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', viz. '*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).

[4] 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

participants, viz. 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, (1.8) expresses participant-imposed dynamic meaning. However, (1.8) 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 study, dynamic meaning expressed by constructions with adjectival matrices is taken to be of the situational subtype, as will be explained in section 2.2.1 below.

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 (von Wright 1951a,[5] 1951b: 36, 1971; Lyons 1977: 823–841; Kratzer 1978: 111; Palmer 1979: ch. 4, 1986: 96–115; Goossens 1985: 204; Van der Auwera and Plungian 1998: 81). A broader definition is found in Verstraete (2005), who takes deontic modality to express the degree of desirability of a certain SoA. More specifically, 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).[6] This definition includes expressions in which permission is (reported to be) granted, or obligation is (reported to be) imposed. Examples are given in (1.9) and (1.10) below.

(1.9) Children of any age are **allowed** to visit their relatives by arrangement with the Ward Sister. This would normally be during the afternoon visiting period only. No children will be **allowed** to visit on the day of your operation. (CB, ukephem)

(1.10) The head of Iran's judiciary, Ayatollah Muhammed Yazdi, has said that Iranians **must** obey the country's spiritual leader, Ayatollah Khamenei, who has insisted that there can be no links with the United States without his permission. (CB, bbc)

A more radical redefinition of deontic modality is proposed in Nuyts et al. (2005). In their view, deontic modality should cover only cases which involve the commitment of an 'assessor' to an SoA in terms of moral principles, and in particular, in which this assessor or modal source, indicates the degree of **moral desirability** of an SoA; deontic modality, in this sense, does not involve granting a permission or imposing an obligation (2005: 8–9).[7]

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).

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

[6] Verstraete (2005: 1402) uses the term 'agent' to refer to "the person who is given permission or is under the obligation to do something."

[7] In his comment on Bybee et al.'s (1994) categories of agent-oriented versus speaker-oriented modality, Kiefer (1997: 247–248) already 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

More precisely, deontic expressions involve the commitment of an assessor to an SoA in terms of moral principles. Crucially, those principles are external to the SoA under assessment. Therefore, they classify deontic modality as an **attitudinal category** in the qualificational domain.[8] The following examples all express deontic modality as defined by Nuyts and colleagues.

(1.11) 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 (report, 18/03/1996); and how striking it was that supermarkets, stations and sports stadiums suspended their business at the time. (March 13, a massacre took place in Dunblane, Scotland) (CB, times)

(1.12) Taking such an approach was entirely necessary because of the growing extent of the problem. And because of the enormous damage which the overall claims bill could do to the Irish economy - and to the reputation of the Defence Forces. 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)

(1.13) There is no pre-contract available in Scotland. I have written to both the SFA and the Scottish League pointing this out. Morton will not be disadvantaged by any other football club. We also **deplore** that a person not involved in the affairs of this club gave advice to the player. (CB, sunnow)

(1.14) 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 et al. 2005: 29 (24))[9]

According to Nuyts et al. (2005), in these examples no permission is granted, nor is any obligation being imposed. Rather, the (reported) speakers relate the actions or facts to their moral principles. The assessors thus commit themselves to the particular SoAs on the basis of **SoA-external** principles. It should be noted that Nuyts et al. (2005: 8 note 3) adopt a broad definition of morality, as "it need not involve societal principles, however, it can also concern strictly personal norms of the assessor."

If utterances expressing permission or obligation are excluded from the category of deontic modality, which type of meaning do they express? Nuyts et al. (2005: 9) propose

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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 elaborate discussion in found in Nuyts et al. (2005).

[8] Remember that dynamic utterances involve indications of possibilities/necessities on the basis of SoA-internal grounds (see section 1.1.1). As they do not indicate an assessment of a particular assessor's commitment to the SoA, Nuyts (2005) classifies dynamic modality as a situating category, rather than an attitudinal category (see section 1.2.1 for further discussion).

[9] In fact, 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)

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, "of the same type which also underlies a mood category such as the imperative" (Submitted: 5). 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 et al. Submitted: 5). In that case, the directive is said to be 'inspired' or 'informed' by a deontic judgement (ibid.).[10]

From a cognitive perspective, there is a fundamental difference between the dimension of directivity and that of deontic meaning (Nuyts et al. Submitted: 37–39). As an attitudinal category, deontic modality belongs to the domain of qualifications of SoAs. This domain is basic to human conceptualisation: qualificational categories are "central dimensions of our cognitive system for storing and handling world knowledge" (Nuyts et al. Submitted: 38). Directivity, by contrast, is not a qualificational category, but an **illocutionary notion**. As such, it belongs to the communicative 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, viz. the system for planning communicative behaviour. (Nuyts et al. Submitted: 38)

Nuyts et al. (Submitted: 37–39) thus locate deontic modality and directivity in different 'components' of the processing systems, more precisely the conceptual versus illocutionary component. They acknowledge relations between these two dimensions in that "communication is obviously instigated and steered by the conceptual system" (Submitted: 38). Directive expressions, for instance, may be dynamically, deontically, or boulomaically informed. In this study, I will adopt this cognitively salient distinction between the conceptual and illocutionary domain, and I will restrict deontic modality to the former. In section 2.2.2, I will discuss the relevance of the distinction to my own research, but I will also argue that the purely conceptual definition of deontic modality proposed in Nuyts et al. (2005, Submitted) is still too broad to do justice to the data.

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[10] Directives are not necessarily inspired by deontic assessments. As Nuyts et al. (Submitted: 17–24) 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.

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 et al. 1994: 179–180; Van der Auwera and Plungian 1998: 81; Nuyts 2006: 6). Examples are given in (1.15) and (1.16).

(1.15) Couples also tend to divorce around the fourth year of marriage. Perhaps our forebears evolved the human drive to form pair-bonds to last at least long enough to raise a single child through infancy. 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)

(1.16) 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 (1.15), the speaker regards it as probable that the evolution of marriage and divorce occurred in the way (s)he sketches in the ensuing discourse. In (1.16), the police regard it as possible that the murdered woman has known her killer. It appears then 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 2004). Chung and Timberlake (1985: 244) and Timberlake (2007: 316) use the term *epistemological modality*. An example is given below.

(1.17) The Commander in Chief of the Bolivian Armed Forces, General Jorge Moreira, 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, reputed to be the largest cocaine producing centre in the country. (CB, bbc)

In (1.17), the adverb *allegedly* indicates that the speaker has the information on the American abuses in Bolivia from hearsay or reported evidence.[11] Because the speaker presents this information as reported, we can infer that (s)he 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 study (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. Alternative organizations of the modal domain include (i) the two-way division between root and epistemic modality, (ii) the four-way divison as proposed in Van 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 which 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 cutting out dynamic modality from the modal pie. 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 accounts are all cognitive theories, in which the subtypes of

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

root and epistemic modality are conceptualized in terms of force dynamics (Talmy 1981, 1988; Sweetser 1984, 1990; Langacker 1990: 336, 1991: 271; Achard 1998).[12] 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. Other Anglo-American authors who explicitly do so include Hofmann (1976: 93, 1979: 3) and Coates (1983: 20–21). Palmer (2001), then, 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 group situating modal meaning with one of the attitudinal modal categories, and oppose this blend to another attitudinal category (viz., 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 et al. 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 et al. 1994: 177). It includes notions such as obligation, necessity, ability, desire, willingness, and root possibility (1994: 176–179). Apart from these two subtypes, Bybee et al. (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 (i.e., types of 'directives' (1994: 179)), and permission. 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.,

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

De Haan 2006: 31). From the directive examples given under the heading of agent-oriented modality (Bybee et al. 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).[13] In their **semantic map of modality**, they distinguish four types of modality:[14] (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 thus covers the participant-inherent and participant-imposed subtype (cf. (1.1) and (1.2)), but not the situational subtype (cf. (1.3)). In fact, in expressions of participant-external modality (i.e. situational dynamic modality as defined above) or deontic modality, the possibility or necessity is not ascribed to the first-argument participant, 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:

> 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. Therefore, as 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 wedge of pie is excluded, viz. situational dynamic modality without an (implied) first-argument participant (cf. (1.6)).

Finally, a third alternative organization of the modal domain is 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**. More specifically, his model of modality features the dimension of 'volitivity' and that of 'event-orientation' versus 'speaker-orientation'. The

[13] A similar line of reasoning is found in Goossens (1983, 1999).
[14] Although they explicitly mention four types of modality, they actually only distinguish three main types, since deontic modality is regarded as a subtype of participant-external modality, as explained below (Van der Auwera and Plungian 1998: 81).

starting point of his 'volitivity' dimension is Jespersen's (1992 [1924]: 313–321) distinction between deontic and epistemic modality in terms of an "element of will" (see also Heine 1995: 29; 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 rather dynamic and evidential 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 even-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 also forms a continuum, 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:

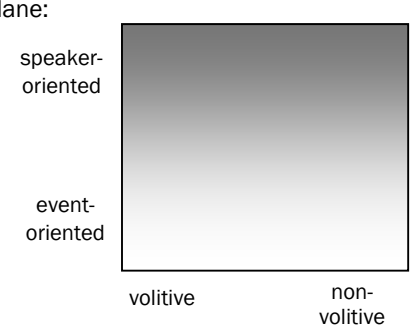

Figure 1.1: The two dimensions of modality (Narrog 2005a: 694, Figure 3)

Much like Palmer (2001), Van der Auwera and Plungian (1998), and Bybee and associates, Narrog re-slices the modal pie to account for cross-linguistic data, but he offers a very different model, and in that sense does more than offer an alternative delineation of dynamic and deontic modality. The major merits and minor points of his proposal will be dealt with in the following sections. 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 1.2. As Nuyts (2005, 2006) analysis – represented in the bottom row – is the most fine-grained, it serves as a the 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 1.1 above). The categories that are not regarded as belonging to the modal domain by the respective authors are visualized as shaded cells. Nuyts's row lacks shaded cells to indicate his problem with the notion of modality as an overarching semantic category (see section 1.2.1 below).

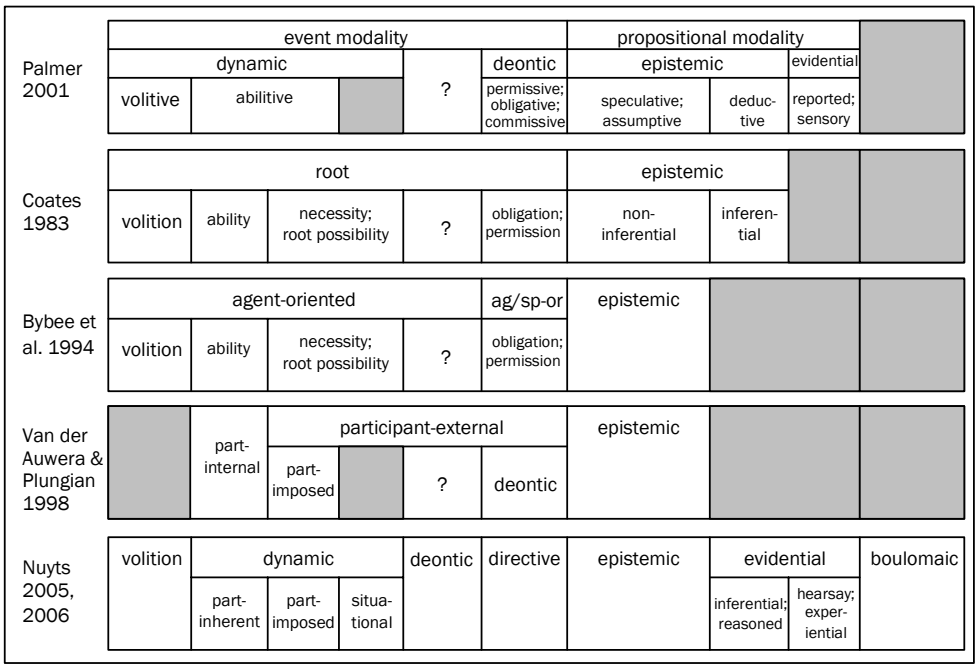

Figure 1.2: An overview of the modal domain and its conceptual categories as presented in the literature

1.2 Relations between the basic categories

So far, I have introduced the three basic or core categories constituting the modal domain, viz. 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. In section 1.2.1, I will discuss the conceptual relations and defend some basic distinctions, as they are proposed in Nuyts (2005, 2006). In this section, I will use the definitions of the categories that were presented in sections 1.1.1 to 1.1.3. In section 1.2.2, I will take a closer look at the formal, diachronic and ontogenetic relationships. Here, I will refer to the three categories as they are traditionally defined.

1.1.5 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.[15] This distinction, proposed in Nuyts (2005, 2006), hinges on a fundamental conceptual difference between the categories, viz. 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 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 first-argument participants or situations are invariably based on SoA-internal grounds.[16] Therefore, 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

[15] 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.

[16] 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). As such, 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).

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 first-argument 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 first-argument participants (as in (1.3) and (1.7) above). By contrast, in situational dynamic expressions without any (implicit) participant (as in (1.6) above), the modal element necessarily applies to the SoA as a whole.[17] In section 2.2.2 below, 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**. In the case of attitudinal categories, the assessor (typically the speaker) can obviously estimate his/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 can be seen, 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 dynamic modality 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 of dynamic and deontic modality.

(1.18) 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)

(1.19) The doctor carrying out the sterilisation can keep a check on the progress of the catheter by using an endoscope that Conceptus claims is the smallest in the world. Measuring only 0.5mm in diameter, 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, called the isthmus. It is **crucial** that the blocking device, a spring which resembles a wood screw, is deposited at this point to ensure that the tubes are rendered impassable. (CB, times)

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

[17] This explains why those expressions are often said to express existential or epistemic modality (cf. section 1.1.1, note 3).

(1.21) 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)

(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)

(1.23) In the absence of a promising peace process, he [i.e. George Bush] 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, and committed to moving ahead with the peace process. (CB, bbc)

Examples (1.18) and (1.19) 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 (1.18), and the necessity originates in the physical properties of the female reproductive organs in (1.19)). Intuitively, there are no intermediate values between this possibility and necessity. The examples (1.20) to (1.23), by contrast, express deontic meaning, and involve assessments in terms of desirability to different degrees. Example (1.20) expresses the lowest degree: the speaker thinks it is acceptable for teenage magazines to include sex manuals, for example, but the following discourse makes it clear that the speaker does not think it highly desirable. In example (1.21), the desirability of the SoA is estimated to a higher degree than in (1.20), 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. Likewise, in (1.22) 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 (1.18). Example (1.23), 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. These examples thus illustrate that dynamic modality is a binary category, 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.[18] The examples above, however, have shown that deontic modality, as a conceptual (i.e., non-

[18] In this perspective, for instance, 'permission' can be equated with deontic possibility and 'obligation' with deontic necessity

directive) category, is scalar. In this study, I thus adopt 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 1.1 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 further detail (for further reading, see Lyons 1977: ch. 17; Levinson 1983: ch. 5; Verstraete 2001, 2007: ch. 1).

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

Table 1.1: The characteristics of attitudinal and situating categories (cf. Nuyts 2005, 2006)

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 introduced 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 adopt 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).

1.1.6 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, viz. **modal auxiliaries** (Palmer 1986, 2001; Bybee et al. 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, i.e., they behave differently from main verbs as regards 'negation', 'inversion', 'code',[19] and 'emphatic affirmation' (Palmer 1965: 19–27, 1974: 18–25; Huddleston 1976: 333). 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). In English, for example, the modal verb *must* can be used to express dynamic, deontic and epistemic meaning, as illustrated in examples (1.24) to (1.26) respectively.

(1.24) The pills, called Viagra, were originally developed to treat men with heart problems. But doctors were stunned to discover they gave their patients erections. Almost half of all Irishmen over the age of 40 - and many younger ones - are thought to suffer from impotence. Users **must** take a pill an hour before making love. (CB, sunnow)

(1.25) 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. Children tortured in front of their parents. We must never fail like this again. 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)

(1.26) "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)

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, as will be explained below.

First, diachronic studies on the modal auxiliaries, or 'the modals', have pointed to developmental relations between the modal categories.[20] Traugott and Dasher (2002), for example, found a **pathway of change** from dynamic via deontic to epistemic meaning for

[19] 'Code' stands for post-verbal ellipsis: unlike main verbs, modal auxiliaries survive post-verbal ellipsis, as shown in (i) below.

(ii) It was only his second touch of the game but, as ever, the touch of a genius. His team-mates could hardly believe it and nor **could** the delirious Chelsea fans. (CB, sunnow)

[20] Much of this research has been embedded in the study of grammaticalization, which 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).

the English modal *must*. The same development has been proposed for *can* (Goossens 1983). Bybee and Pagliuca (1985) and Bybee et al. (1994) provide cross-linguistic evidence for this diachronic relation between the modal categories. These studies also show that modals are ultimately derived from non-modal expressions, such as verbs meaning 'know' or 'arrive' (Bybee et al. 1994: 188). However, as Nuyts (2006: 16) notes, there are reasons to question the universality of this strictly linear pathway. More specifically, although epistemic meanings tend to develop 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 which show "a parallel – though not necessarily temporally simultaneous – development from dynamic into deontic and from dynamic into epistemic" (Bybee 1988; Bybee et al. 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. Finally, Narrog (2005a) presents case studies 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". We can thus conclude that the pathway from dynamic via deontic to epistemic is not universal, but that there is support for a more general development, viz. one in which a non-modal item comes to express a dynamic meaning, and later develops from a situating category item into an attitidunal 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). In particular, 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' 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 in 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 express 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 relations 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, viz. adjectives. The formal relations established by these adjectives will be discussed in section 2 below. I will discuss their patterns of polysemy, which are, however, more restricted than those of the modal auxiliaries. In further chapters, I will also point to diachronic relations between the modal notions that the adjectives studied here are found to express (see chapters 3 and 5). The question whether these relations also apply in ontogenesis, however, is beyond the scope of this study.

The sections on the basic modal categories (1.1) and the relations between them (1.2) have 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 section 2, however, I will propose to adapt the definition of deontic modality in order to accommodate the adjectival data. 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. More precisely, I will explore the borderline categories of modality, and I will introduce some notions whose inclusion in the modal domain is controversial.

1.2 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, viz. the first four categories listed here.

1.2.1 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. As mentioned above, Bybee et al. (1994: 179) include various types of directive moods (e.g., commands, requests, warnings, exhortations) within the category of speaker-oriented modality. 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 study, mood will be used in the last sense, more specifically to refer to the distinction between indicative and subjunctive mood. Examples are given below.

(1.27) I don't think anyone is happy with this - including the President. 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)

(1.28) 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 (1.27), the finite verb of the *that*-clause is in the subjunctive mood (*be*), whereas the finite complement in example (1.28) has an indicative verb (*is*). In section 2.3, I will briefly discuss the distribution of the two types of mood. I will also return to this distribution in various other places in the rest of this study.

1.2.2 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). In yet other accounts, volition is subsumed under the category of 'boulomaic' modality (e.g. Rescher 1968: 25; Kratzer 1978: 102; Perkins 1983: 11; Hengeveld 1988: 239; Narrog 2005a: 684).[21] 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 examples.

[21] Etymologically, the term 'boulomaic' derives from the Greek deponent verb βούλεσθαι, which means 'want', 'desire', or 'wish'. The form that the term is actually based on is the present indicative first person singular form, viz. βούλομαι ('I want'). As such, it is certainly not a textbook example of classical derivation. Therefore, Palmer (1986: 12) proposes 'bouletic' as an etymologically preferable term. Kratzer (1978: 102) uses the German equivalent 'buletisch'.

(1.29) 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, like if I hadn't agreed to interview her it wouldn't have happened. 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)

(1.30) 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)

(1.31) "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 think I think the whole thing is fraught with danger. 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)

Example (1.29) shows that the expression of volition applies to the first-argument participant, viz. 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 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 (1.30), in which the grading adverbial phrase *very much* indicates that the she-person wants to see the hearer to a high degree. Moreover, example (1.31) shows that the arguments on which the expression of volition is based are not necessarily SoA-internal. In fact, the context makes it clear that here 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. In this study, I do not intend to determine the modal status of volition. However, in the definition of deontic modality that I will propose in sections 2.2.2 and 2.2.3, the notion of volition plays an important role.

1.2.3 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 (s)he finds (un)acceptable, (un)rational or (un)reasonable. He gives the following example and explanation.

(1.32) 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 et al. (2005). The speaker does not lay an obligation upon the government, but (s)he commits him/herself to the SoA in terms of rational principles. In this study, 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.

(1.33) 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 study. However, I included this discussion of rational modality as it is one of the first attempts to separate deontic modality from directive meaning.

1.2.4 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 (1.34), humorousness (1.35), likeability (1.36),[22] and significance (1.37).

(1.34) 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 -- and now you can do so, too. (CB, ukephem)

[22] 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.

(iii) 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. They say they can afford to buy a house here and are prepared to commute to work every day. (CB, sunnow)

(1.35) Brenda - who lives in London with Geordie hubby Bernard - 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. I'm amazed how things have turned out for me." (CB, sunnow)

(1.36) 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, wide-of-the-mark, but then again maybe not (didn't see any Tory mps there. It's **horrible** that it's happened, it makes you think of Hitler all over again. (CB, ukmags)

(1.37) It might be trifle premature to talk of the UK's innovators - and we do have some genuinely world class products - 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 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. In particular, he distinguishes the dimensions 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 study, I also 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 1.3 below.

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. More precisely, 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

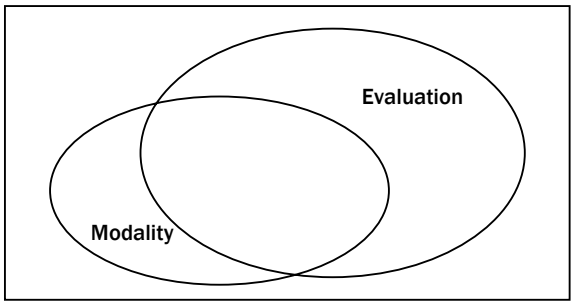

Figure 1.3: The relation between modality and evaluation in this study

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. Finally, evaluations are 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 below

1.3 Conclusion

In the preceding sections I have discussed the notion of modality in three ways, and I have indicated the aspects that are of interest to my study. First, I presented the basic categories that are traditionally regarded as constituting the modal domain, viz. dynamic, deontic and epistemic meaning (section 1.1). 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 (section 1.2). The discussion of the conceptual relations further refined the definitions presented in section 1.1. It also provided answers as to why alternative organizations of the modal domain presented in section.1.1.4 are problematic, and it paved the way for the discussion of evaluation in section 1.3.4. The discussion of the formal, diachronic and ontogenetic relations, in turn, focused primarily on the grammatical category of modal auxiliaries, but it also raised some of the questions for the present study. Third, I explored the outer borders of the modal domain, and concentrated on a number of 'marginal' modal notions that are important to my object of investigation, viz. mood, volition, rational modality, and evaluation (section 1.3). It should be noted, however,

that these three sections have not focused on the notion of modality as an overarching semantic category. This topic will be discussed in the following section, in which I concentrate on the data studied here and relate those to the concepts introduced above.

2 Adjectives in the modal-evaluative domain

This study is concerned with adjectives that express meanings from the positive half of the 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. As mentioned above, it investigates adjectives in one major type of construction, viz. with clausal complements. Examples of adjectives construed with a *that*-clause and *to*-clause are given in (1.38) and (1.39) respectively. Expressions with action nominals, such as (1.40), are thus disregarded.

(1.38) 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)

(1.39) Challenge organiser Dr Alastair Adam said: "The route over the hilly part is on a site of special scientific interest. It was thought only right and **proper** to take the environment into account." (CB, sunnow)

(1.40) Their statement, while saying that a peaceful solution should be sought `if at all possible", did represent a warning to the Iraqis that *a military solution* might well be **necessary** if Iraq did not pull out. (CB, bbc)

In this section, I will first introduce the adjectives that are the object of investigation, and I will propose a lexico-semantic distinction between weak and strong adjectives (section 2.1). In section 2.2, I will concentrate on the various types of meaning the adjectival constructions can express. In particular, I will argue that the category of deontic modality as defined by Nuyts et al. (2005) includes two different types of meaning that need to be distinguished to do justice to the data, viz. deontic (more narrowly defined as applying to tenseless SoAs) and non-modal evaluative meaning. More generally, I will contend that this reassessment of deontic modality involves a definition of modality in terms of factuality. Together with dynamic meaning, the newly distinguished types make up the range of meanings expressed by the adjectives studied here. I will also show that the distribution of the adjectives across these types is lexico-semantically determined. In section 2.3, finally, I will propose a conceptual map which incorporates the various lexico-semantic and conceptual distinctions discussed in sections 2.1 and 2.2. As the backbone of this thesis, the map will also motivate the structure of the rest of this study.

2.1 The adjectives under investigation

In order to chart the main lines of this study, it is necessary to take a closer look at the adjectives studied here. The onomasiological search for lexical items has yielded a set of adjectives that forms the basis of this study. The Present-day English set is presented in Table 1.2 below; all adjectives express a particular meaning within the positive sphere of the deontic modal domain.

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

Table 1.2: The Present-day English dataset

In the table, the adjectives are divided into two semantically coherent sets, viz. **weak and strong adjectives**. This distinction can be made on intuitive grounds in the sense that strong adjectives, such as *essential* in (1.38), express a stronger degree of desirability than weak adjectives, such as *proper* in (1.39) (cf. Övergaard 1995: 85; Huddleston and Pullum 2002: 997). In the following sections, I will adduce syntactic and constructional arguments for the lexico-semantic distinction. More precisely, I will show that it can be linked up with the various modal-evaluative notions the two sets of adjectives can express, within the different constructions they are used in. In chapter 2, which discusses the data and methods used in this study, I will account for the choice of the data – both diachronic and synchronic, and I will provide further independent evidence for the distinction between weak and strong adjectivces.

2.2 Constructions with adjectives: conceptual types

In section 1 I introduced the notion of modality, and how it has been defined in the vast literature on the subject. I also indicated which concepts, definitions and distinctions are useful to this study. In this section, I will discuss these in more detail. More specifically, I will argue that the adjectives studied here show that (i) the three-way division of the dynamic domain is useful, (ii) the distinction between deontic and directive meaning is useful, and that (iii) the adjectival data prompt a reassessment of the concept of deontic modality as defined in Nuyts et al. (2005, Submitted). It will also be shown that this reconsideration implies a definition of modality in terms of factuality. These three claims will be discussed in sections 2.2.1 to 2.2.3 respectively.

2.2.1 Adjectives and dynamic modality

The type of meaning traditionally associated with dynamic modality is that of ability or capacity, as discussed in section 1.1.1 above. Adjectives that express this type of meaning

are, for example, *able* and *capable*. In this perspective, the adjectives listed in Table 1.2 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, viz. participant-imposed and **situational dynamic modality**. As indicated in section 1.1.1, 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 (1.41) and (1.42).

(1.41) 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)

(1.42) Not everyone enjoys its strong distinctive flavour, but it is definitely worth trying Salsify and Scorzonera Two rather similar vegetables with a delicate flavour which you can very seldom buy in the shops. They 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 example (1.41), 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. In example (1.42), the necessity of making a conical hole derives from the nature of the two vegetables talked about, viz. Salsify and Scorzonera, which is beyond the participant's control as well. Although the participant (a generic *you*, viz. 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, discussed in sections 1.1.1 and 1.2.1. More 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, viz. *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*.

(1.43) Did Shakespeare's King Lear or Macbeth lead to serial killing in their day? Was the Spanish Inquisition at a playwright's instigation? Was the Holocaust predicated on Jimmy Cagney movies? 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)

(1.44) 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, combined with the Soviet leader's suggestions for the reorganisation of central government - still more presidential power combined with a key executive role for the republican leaders - it might even, if everyone agreed to it, provide the basis for effective government. It might then become **possible** to address the country's appallingly complex economic crisis. The problem is that the basic premise, that everyone should be prepared to sign the treaty, is unobtainable. Many don't want to sign any Union Treaty with Moscow, under whatever terms. The Baltic republics and Georgia have made this unequivocally clear. Others may join them. (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 (1.43), the speaker tentatively expresses his 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 (1.44), 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

As discussed in section 1.1.2 above, deontic modality is traditionally defined in terms of permission and obligation. However, Nuyts et al. (2005, Submitted) argue that this definition does not 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. 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). This distinction between **conceptual deontic** and **illocutionary directive meaning** is useful for the description of the adjectival constructions studied here. Consider the following examples.

(1.45) Country sports make a hugh [sic] voluntary contribution to conservation of the countryside Angling clubs fight pollution and water abstraction; shooting and hunting enthusiasts maintain woodlands and hedgerows. It is **essential** that we protect wildlife habitats; but we have to face up to the fact that 80 [%, AVL] of the countryside is in private ownership. (CB, ukephem)

(1.46) We consider that our security must be guaranteed by consolidating the nationalities within our own nation-state and also through bilateral treaties with all the other Balkan countries. It's also **important** to set up a European security system. (CB, bbc)

(1.47) It is **obligatory** to drive with dipped headlights on, even during the daytime, even on the brightest summer day. This rule applies to all vehicles, including motorcycles and mopeds. (CB, ukephem)

In example (1.45), the speaker thinks it is highly desirable that we protect wild life habitats. In example (1.46), the speaker thinks it important to set up a European security system. Both examples thus involve an attitudinal judgement, but the adjectival matrices do not encode the illocutionary meaning of obligation. By contrast, example (1.47) with *obligatory* does encode (descriptive) directive meaning: the speaker reports on the existence of the obligation to drive with dipped headlights on. Adjectives encoding directive meaning will be included in the conceptual map in section 2.3.1, but they are not the main objects of investigation.[23] In any case, the examples support the need to distinguish conceptual deontic meaning from illocutionary directive meaning as proposed by Nuyts et al. (2005, Submitted), since these two types of meaning correlate with different sets of adjectives. Still, the adjectives studied here suggest that deontic and directive meaning are not unrelated. On the one hand, the hearer may pragmatically infer a directive meaning from a deontic expression as a preferred interpretation (Levinson 2000), but this is a cancellable implicature: the speaker of (1.46) may say "I just said it is important to set up a European security system, I did not order you to take steps yet". On the other hand, speakers may intend to perform a directive speech act, but they can choose to utter 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 et al. 2005: 48).

Even though the distiction between deontic and directive meaning is backed by the data, the concept of deontic modality as defined in Nuyts's work is not unproblematic, and this is especially clear in the study of modal adjectives. More precisely, it has become so broadly defined that it does not take into account the **factuality status** of the SoA under assessment. Whereas expressions of permission and obligation (deontic in the traditional definition) invariably involve tenseless or potential SoAs, which are realized in the future by default (cf. Bolinger 1967b: 356–359; Palmer 2001: 8; Verstraete 2007: 42–46), Nuyts (2005: 23) 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" (italics

[23] Directive adjectives will only be dealt with in chapter 6 (section 4), which proposes refinements of the conceptual map on the basis of Present-day English data.

added), and thus assumes that deontic modality applies to both tensed and tenseless SoAs. In his view, the following examples all express deontic meaning.

(1.48) OBVIOUSLY, when choosing a guitar, it's **important** to consider the style of music you'll be playing. Nick: "Yeah, the Starfield is on a par with the Hohner, but in a different style. If you're playing rock it's always good to go for something with humbucking pickups." (CB, ukmags)

(1.49) The show at The Works had a lot of coverage from the mainstream press, which included the Independent, I-D magazine and even the Sun, who took great delight in including an inset of the Bona Lisa. I felt it was very **important** that they chose to feature Lesbian Arts Network, as it meant that the mainstream was readily accessible. Such results are the driving force behind Sadie's work. (CB, ukmags)

(1.50) 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 example (1.48), the SoA that is assessed as important (viz. considering the style of music you'll be playing) is potential at the time of speech. The expression serves as a general guideline in choosing guitars, and the SoA referred to in the *to*-clause has not been carried out yet (nor does the context give indications as to whether it will be carried out or not). In example (1.49), by contrast, the context suggests that the SoA assessed as important (viz. the decision to feature Lesbian Arts Network) has already been actualized at the moment of deontic assessment (*I felt*). In example (1.50), the SoA that is assessed as good (viz. the taking part of Arsenal and Manchester United in the Champions League) has not been actualized at the moment of deontic assessment (viz. the moment of speech), but at that same time, it is certain that these two clubs will play in the Champions League. Thus, 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 (1.48)), or presupposed to be true (already actualized in (1.49), or bound to be actualized in (1.50)).

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 (1.48), for instance, the question of whether it is true that someone considers the style of music (s)he will be playing is not discursively relevant. Reactions of the hearer such as 'I did not know you consider the style of music you will be playing when you choose a guitar' would count as non-cooperative turns, as the speaker has merely assessed the desirability of the SoA. For expressions with presupposed SoAs such as (1.49) and (1.50), by contrast, the question of the SoA's likelihood is relevant. In reaction to (1.49), for example, the hearer might interrupt with 'I did not know they chose to feature Lesbian Arts Network' 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).[24] Deontic constructions such as (1.48) resemble directive expressions in that the modal position operates over virtual or potential SoAs, which are tenseless. In constructions such as (1.49) and (1.50), 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.

(1.51) 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 <u>are followed</u> carefully and that you <u>take</u> your tablets exactly as directed by your pharmacist. (CB, ukephem)

(1.52) 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 <u>have not passed</u> urine for at least 4 hours before testing. Using your first urine of the day may be best. (CB, ukephem)

(1.53) 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 <u>is</u> an actress. Young people think actresses will run the country better than politicians." (CB, today)

[24] 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)

(1.54) 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. It is perfectly obvious it has been grossly under-resourced." (CB, today)

In example (1.51), the present tense forms of the complement finites *are* and *take* do not locate the realization of their 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 (1.48) above: when you travel to malarious areas, it is desirable to follow these steps carefully. Crucially, the same goes for the perfect form *have passed* in example (1.52). This form does not locate the SoA differently relative to the temporal zero-point than the present forms in (1.51). 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, viz. 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 (1.51) and (1.52) 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. In (1.53), 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 (1.54) 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 Dorrel has already identified community care as a top priority for improvement. Unlike with (1.51) and (1.52), the present-perfect contrast thus forms a deictic contrast, with present and perfect locating the SoAs as as simultaneous with (in (1.53)) and anterior to the temporal zero-point (in (1.54)) (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 (1.51) to (1.54) 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,[25] I will use the term 'presupposed' SoA as opposed to 'potential' SoA in this study.

The difference in factuality status, or that between tenseless and tensed SoAs, in deontic expressions implies a difference in semantic type of the **clausal complement** and the **adjectival matrix**. In fact, only potential SoAs, as in (1.48), (1.51) and (1.52), can be regarded as morally desirable in the true sense of the word, as these SoAs have not yet been actualized. Deontic constructions with a potential SoA in their complement thus 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

[25] In fact, the notion of presupposition has often been related to factivity, cf. Kiparsky and Kiparksy 1970, Kempson 1975, Wilson 1975, Karttunen and Peters 1977 and Horn 1996.

volitional flavour is encoded, rather than implicated, as, for instance, the expressions in (1.45), (1.46), (1.48) (1.51) and (1.52) 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 tenseless SoA will be termed 'mandative' complements (cf. Wierzbicka 1988: 133–134 on verbal complementation). By contrast, complement constructions with presupposed SoAs lack this volitional flavour. In fact, it makes little sense to desire the actualization of an SoA that has already been actualized (temporal relation of anteriority, as in (1.54)), is being actualized (temporal relation of simultaneity, as in (1.53)), or is bound to be actualized (temporal relation of posteriority, as in (1.50)). Therefore, speakers cannot assess such SoAs as desirable, but they can only evaluate them as good (as in (1.50)), fitting, or important (as is (1.53) and (1.54)). It should be noted that with presupposed complements, *important* typically means 'significant', as for instance in (1.54) (cf. Lemke 1998: 36–37). Again, the factuality status of the SoA under assessment forces a meaning onto the adjectival matrix, viz. an evaluative meaning. As 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.

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 with mandative complements (containing a potential SoA as in (1.46), (1.48), (1.51) and (1.52)) as well as in those with propositional ones (containing a presupposed SoA as in (1.49), (1.50), (1.53) and (1.54)). Strong adjectives, by contrast, are restricted to constructions with mandative complements, as in (1.45). Thus, the potential for the adjectives to combine with potential or presupposed SoAs is lexico-semantically determined.

Based on these observations, we can argue against Nuyts et al. (2005, Submitted) 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 et al. (2005) regard all examples (1.45), (1.46) and (1.48) to (1.54) 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 1.3 below. (Again, note that the characteristics in (3) and (4) are in complementary distribution.) 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. As discussed above, the two categories express the desirability of SoAs that are potential. In addition, they are both tied to the participant agent, who is wanted or expected to carry out the action the SoA of the complement or imperative.

Conceptual properties		attitudinal	directive	cxn with potential SoA	cxn 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 (+)	-/+[26]	-	-	+

Table 1.3: The conceptual properties of constructions (cxns) with a potential SoA and a presupposed SoA compared to those of attitudinal and directive meaning

Clearly, this property derives from the volitional character of both categories. In fact, 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 hence not tied to a participant agent. Rather, they evaluate a propositional content, and therefore apply to the SoA as a whole. Thus, 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. (1.48) to (1.50), see also section 1.2.1 above). However, this solution would not do justice to the data, for the reasons discussed above. A third solution, the one I propose in this study, is presented below

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. More specifically, I propose a redefinition of deontic modality which covers

[26] 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 (1.51) and (1.52), e.g. Nuyts (2006: 5 (7a)).

expressions with a **potential SoA**, but excludes expressions with a presupposed SoA. In this definition, deontic modality is reduced to its traditional definition to some extent, in that I take deontic assessments to apply to virtual SoAs (whose realization is by default in the future like those of directives), and to be tied to an agent participant, who is expected to actualize the SoA (see Table 1.3 above). However, I stick to the distinction between conceptual deontic and illocutionary directive meaning, and – concurrently – to scalarity as an important property of the first category. In addition, I propose to relegate the expressions with a presupposed SoA to the realm of evaluative meaning as this was described in section 1.3.4, on a par with expressions in which the (speaker's) assessment also applies to the SoA as a whole. Examples of such expressions are given below.

(1.55) He is still recognized today, even without the sideburns. "I'm afraid I'll probably be famous for that," he says. "But it's **surprising** that after 20 years people recognise me. Sometimes they say very choice words." (CB, times)

(1.56) It is **ironic** that India reveres thousands of goddesses and mothers as a reincarnation of a goddess on earth and yet we allow the dowry system which has become an extortion racket and the 'duty' to have a son. (CB, ukmags)

(1.57) Last season we enjoyed great support on the way to winning the title, but sadlyit hasn't been the same this season. In a way it's **understandable** that people aren't coming to see us like they used to, but hopefully they'll come out for the visit of Harps and our final game at home to Drogheda United next weekend to cheer us on. (CB, sunnow)

All these examples involve attitudinal or evaluative judgements and contain propositional complements, which involve 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 (1.49), (1.50), and (1.53) to (1.57) above are non-modal. First, I will concentrate on the notion of modality as an overarching semantic category.

The distinction between modality and evaluation, I propose, can 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,[27] 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,

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

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.[28] (Narrog 2005b: 184)

According to this definition, modality includes dynamic, epistemic, and evidential meaning. It also covers deontic meaning, but only when the deontic assessment applies to a tenseless 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.

(1.58) One of the keys to Anchor's success has been our ability to innovate and to react quickly to change so that we can be ready to introduce new and improved services to our customers. We **are able** to do this because the calibre of people in the organisation is extremely high. (CB, ukephem) (*modal*; *dynamic*)

(1.59) 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*)

(1.60) 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*)

(1.61) 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 side patio doors and attacked her in her bedroom, where masking tape was found. (CB, times) (*modal*; *evidential*)

(1.62) We both wanted to settle down but once we did, we realised it wasn't the right thing because we wanted different things. 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, the man they have loved for years, go off with someone else. (CB, ukmags) (*non-modal*; *negatively factual*)

(1.63) Unfortunately, since the departure of You-Know-Who, the remaining Nephilim (or is that Nephili?) 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 agents of actions or situations; the SoAs involved are never positively or negatively factual. Deontic expressions

[28] 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).

(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 (s)he 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 follows. Henceforth, I will use the term 'modal-evaluative meaning' to refer to the union of the modality and evaluation set (modality ∪ 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.

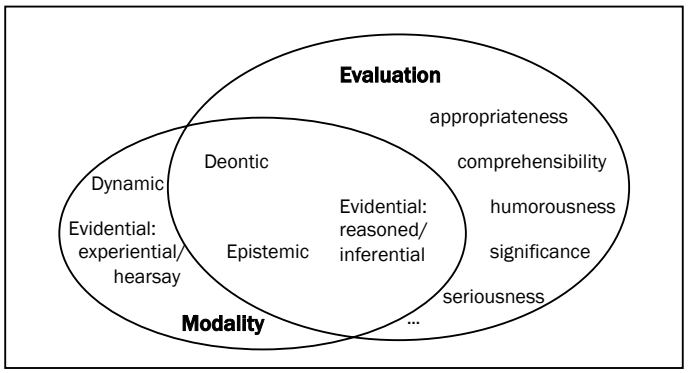

Figure 1.4: The relation between modality and evaluation: types of meaning

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. More specifically, 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 (1.56) and (1.57)) 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 weak ones, were shown to call for a reconsideration of the concept of deontic modality as defined in Nuyts et al. (2005). On the basis of a difference in factuality status of the SoA under assessment, a distinction has been proposed between modal and non-modal evaluation. More precisely, 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 general concept of modality has been defined 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 discussed in section 2.2.1, the two types of evaluative meaning distinguished above make up the range of modal-evaluative meanings that the adjectives studied here 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 includes the lexical and conceptual boundaries dividing the modal-evaluative domain studied here. This map will be presented in section 2.3.1. In section 2.3.2, I will show that the map also functions as a road map for the rest of this study.

2.3.1 *The conceptual map: findings and claims*

This section presents the conceptual map as the synthesis of the lexico-semantic and conceptual distinctions found at work in the adjectival constructions studied here. In addition to the adjectives, it also includes verbs, modal auxiliaries and the imperative mood. A discussion of the division of labour between these categories is postponed until the end of this section. I will first present my conceptual map, given in Figure 1.5 below, and focus on how it integrates the lexical and conceptual distinctions observed in the constructions with the adjectives studied here.

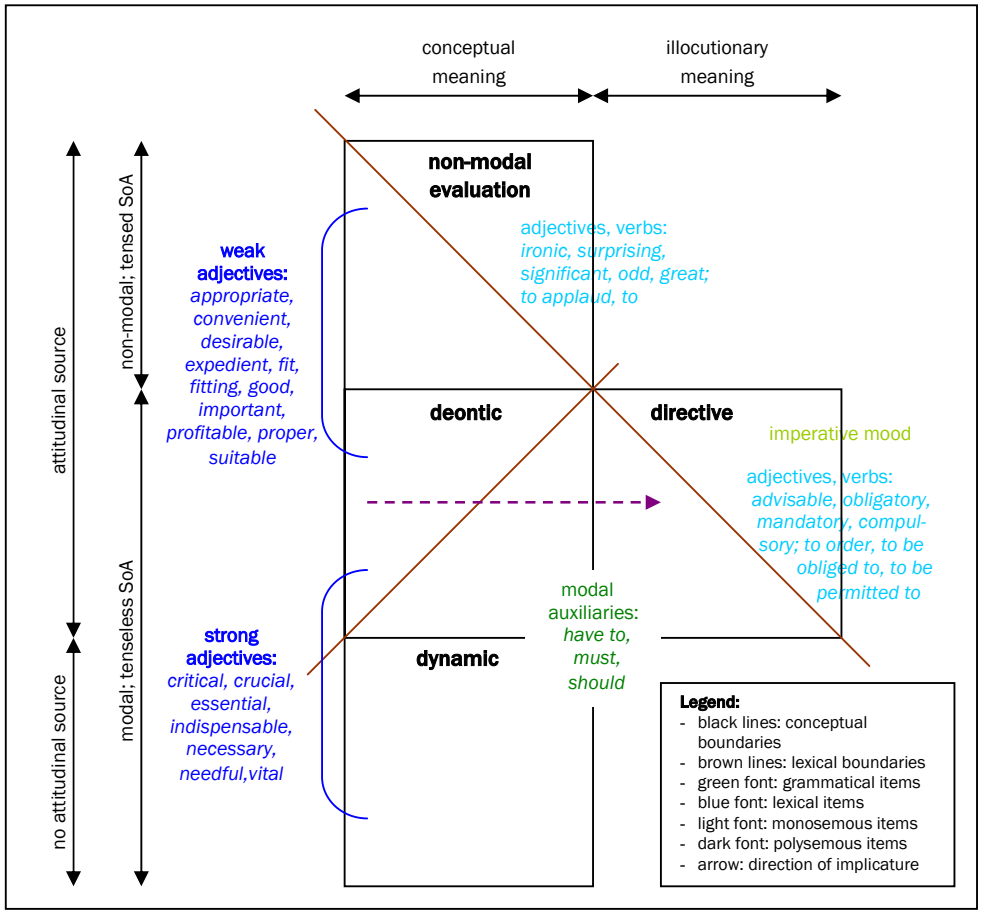

Figure 1.5: The conceptual map of the modal-evaluative domain studied

The main distinction in the conceptual map is that on the horizontal axis, viz. the cognitively salient **distinction between conceptual and illocutionary meaning**, or more generally, between the qualificational and the communicative 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 et al. (2005, Submitted) and Nuyts (2005). As pointed out in section 1.1.2, deontic modality has traditionally been defined in terms of permission and obligation, which are in fact speech act notions. Against this traditional approach, Nuyts and his colleagues have proposed the distinction of deontic attitudinal meaning, which is conceptual in nature, from directive meaning, which is illocutionary in nature. In this study, I have adopted this distinction.

Apart from the cognitive motivations, presented in Nuyts's work and discussed in section 1.1.2, the study of adjectives can also adduce **lexico-semantic arguments** in support of the distinction between conceptual and illocutionary meaning. In the map, lexical boundaries are represented in brown. Adjectives such as *advisable*, *obligatory*, *compulsory* and *mandatory* (in light blue font) are all located in the illocutionary domain on the right. They can only express descriptive directive meaning: they report on an advice or an obligation. The adjectives studied in this thesis (in dark blue font) are all situated in the conceptual domain. Examples (1.64) and (1.65) illustrate illocutionary and conceptual meaning respectively.

(1.64) 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*)

(1.65) 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 dotted arrow going from the conceptual to the illocutionary domain indicates that the adjectives studied – unlike the directive adjectives – can pragmatically shift domains. In fact, the arrow represents the plausibility of **conversational implicatures** from deontic meaning to directive meaning (as discussed in section 2.2.2 above). Deontic constructions with weak adjectives such as (1.65) can be intended or interpreted as a piece of advice, whereas deontic constructions with strong adjectives can be intended or interpreted as obligations.

Interestingly, there is evidence from grammaticalization studies that in other languages the arrow in the map specifies the direction of **grammaticalization processes**. Of the seventy-six languages sampled by Bybee et al. (1994: 31), thirty-four show evidence 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). The driving factor of these grammaticalization processes most probably is the semanticization or conventionalization of conversational implicatures, which has been 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, finally, that in the cross-linguistic data, it is the constructions with weak adjectival matrices that have developed into markers of obligation. In this sense, it is interesting to note that it is the weakest or most polite deontic expression that has acquired the strongest directive meaning. The question why this is the case is beyond the scope of this study. What is important here is that there are indications that the horizontal arrow in the map has diachronic as well as cross-linguistic validity.

The vertical axis of the map represents **distinctions within the conceptual domain**, viz. those between dynamic, deontic and non-modal attitudinal meaning. The two parameters on which these distinctions are based are given on the left. More specifically, the three types of modal-evaluative 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 at issue (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 distinctive parameters. I will try to show that it is the combination of both that offers a new perspective in the literature on modality.

First, the parameter of the **presence or absence of an attitudinal source** sets dynamic modality apart from both deontic modality and non-modal evaluation. The idea underlying this parameter is taken from Nuyts's work. Nuyts (2005) and (2006) elaborate on the difference in conceptual make-up of dynamic versus deontic, epistemic and boulomaic meaning. As discussed in section 1.2.1 and illustrated in (1.66) below, dynamic expressions do not involve attitudinal judgements: abilities/possibilities or needs/necessities inherent in the agent participant or in the situation are indicated on the basis of SoA-internal grounds. In example (1.66), for instance, the air space is necessary for a proper functioning of the insulation/ventilation system. Unlike dynamic expressions, deontic, epistemic, boulomaic and non-modal evaluative expressions do involve attitudinal sources, which make their assessments of the SoA on the basis of SoA-external grounds. A deontic example is given in (1.67): the speaker thinks it appropriate to mention a paper by a professor who has done some pioneering work on childhood leukaemia. In other words, the speaker thinks it is morally desirable to pay credit to him. A non-modal evaluative example is given in (1.68): the speaker regards the fact that the trainer of the filly Snow Princess rescued impoverished punters as appropriate. After a few defeats, the filly has won two races (thanks to its trainer), so that its loyal punters are getting their money back. The speaker makes this assessment on moral grounds, which is also suggested by the reference to Robin Hood.

(1.66) Cut the Multi Purpose Slab to provide a tight fit between the joists, staple a polythene sheet to the underside of the joists to provide a vapour check before fixing the plaster board or lining. It is **essential** that a 50mm air space is provided above the insulation. The void must be ventilated to the outside air via 25mm wide slots cut in the soffit boards on opposite sides of the roof. (CB, ukephem) (*non-attitudinal*)

(1.67) Although not actually published during 1989, it is **appropriate** in this report to mention professor Martin Gardner's paper on an association between parental radiation exposure and childhood leukaemia. (CB, ukephem) (*attitudinal*)

(1.68) After two winners at 20-1, one at 10-1 and one at 8-1, it was **appropriate** that impoverished punters were rescued by Lord Huntingdon, Snow Princess's trainer, whose middle names include Robin Hood and whose ancestry traces back to the famous outlaw of Sherwood Forest. (CB, times) (*attitudinal*)

Second, the parameter of the **factuality status of the SoA** sets apart non-modal evaluation from dynamic and deontic modality. This parameter implies a definition of modality in terms of factuality. As discussed in section 2.2.3, this definition is taken from Narrog (2005b). More specifically, dynamic and deontic expressions (as defined in this study: with tenseless SoAs) do not take the factuality status of the SoA for granted. Rather, they are undetermined with regard to their factuality status, or in Narrog's (2005b) terms, non-factual. In this sense, they are modalized expressions. Examples of dynamic and deontic modality are given in (1.69) and (1.70) respectively. In each case, the modalized SoA is tenseless or potential. Non-modal evaluative expressions, by contrast, invariably involve tensed SoAs: the attitudinal source expresses his/her commitment to a propositional content that is presupposed to be true. An example is given in (1.71). The context and the added indications of time it make clear that the one-minute silence has occurred at the moment of the attitudinal assessment.

(1.69) Immunity from primary vaccination is not life-long and it is **necessary** to boost your pet's immunity by annual revaccination. (CB, ukephem) (*non-factual/modal*)

(1.70) The reinforcements almost double the strength of British forces from sixteen- to - thirty-thousand, with more Challenger tanks, artillery, missiles, more tank-attack helicopters, and two more mine-hunter vessels. The Defence Secretary, Mr King, said the aim is still to resolve this crisis quickly by peaceful means. But it's **essential** to establish a credible offensive military option. (CB, bbc) (*non-factual/modal*)

(1.71) 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 (report, March 18); 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 is found in the literature, albeit in covered terms. More precisely, it can be found 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, 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 do not follow Nuyts's (2005) proposal in its entirety, which 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.

The conceptual distinctions on the vertical axis, just like that on the horizontal one, can be corroborated by **lexico-semantic arguments**. As can be seen in the map, the two parameters discussed above correlate with patterns of polysemy of weak and strong adjectives. Weak adjectives can be found in deontic expressions and non-modal evaluative expressions, as illustrated by *appropriate* in (1.67) and (1.68) respectively, but not in dynamic ones. With respect to the parameters, this implies that there is a subset of adjectives that is specialized in attitudinal meaning. For this subset, the parameter of the factuality status provides a further distinction, viz. between deontic meaning, involving potential SoAs, and non-modal evaluative meaning, involving presupposed SoAs. Strong adjectives, by contrast, are polysemous between deontic and dynamic meaning, as illustrated by *essential* in examples (1.70) and (1.66) respectively, but they do not occur in non-modal evaluative expressions. With respect to the parameters, this implies that there is also a subset of adjectives that is restricted to modal expressions with a non-factual (and tenseless) SoA. Here, the other parameter plays a minor part. In fact, there are no formal differences between complements of dynamic or deontic expressions. The only difference is conceptual: the first ones indicate needs or necessities on the basis of SoA-internal grounds, whereas the second ones are based on SoA-external (moral) grounds. Figure 1.6 visualizes the interaction of the parameters with the two sets of adjectives in relation to the conceptual categories they express. It shows 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.

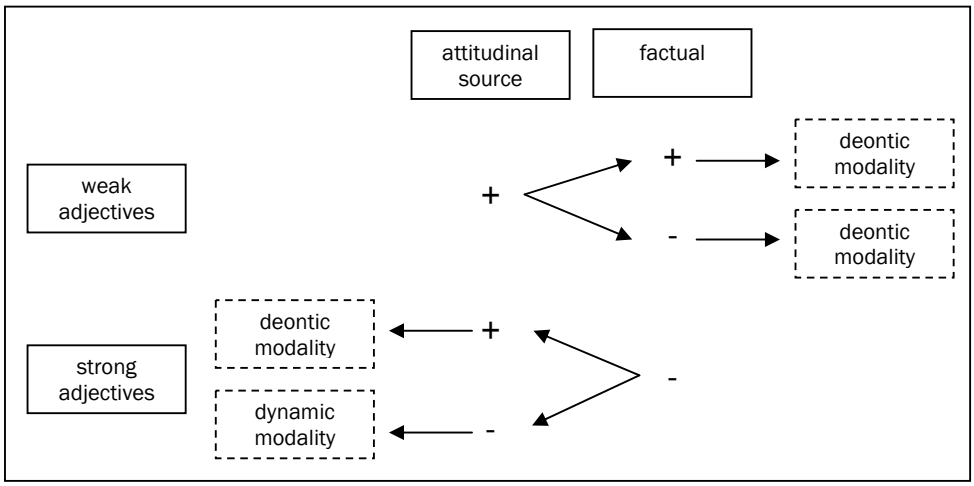

Figure 1.6: The parameters of the conceptual map and their interaction with weak and strong adjectives.

Further arguments for the distinction between modal and non-modal evaluation can be found in the semantic and syntactic properties of **mandative versus propositional complements**. Importantly, 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 (1.51)–(1.54) 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, as in (1.72) below (see chapter 5, section 2).[29]

(1.72) "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*)[30]

The other differences relate to *that*-clauses. As will be shown in chapter 4, section 2.1.2, in Present-day English only mandative complements allow the subjunctive mood, as in (1.73) below. It will also become clear that 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 instance, distinguish between "mandative" and "attitudinal" *should*. They further note that only the first type, illustrated in (1.74), can be replaced by a subjunctive form (2002: 1001). In addition, only for the second type the present-perfect contrast functions as a deictic one.[31] In (1.75), for instance, the perfect form *should have been brought* locates the SoA as anterior to the temporal zero-point.

(1.73) When those in the higher ranks give a verbal order it is **crucial** that it be understood by everyone. On the few occasions I have seen and heard Marcus Fox on television, I have had difficulty understanding him, but that hardly matters. (CB, times)

(1.74) Responding to Sanco's position, a statement issued by government spokesperson Dave Steward in Cape Town said free and fair elections will be impossible unless all political parties are allowed to campaign freely in all parts of the country and among all communities. In this process (of democracy) it is **essential** that the playing fields should be even for all parties in all circumstances the government statement said. (CB, ukmags)

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

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

[30] This example is taken from the *Corpus of Late Modern English texts*, extended version (CLMETEV) (see chapter 2, section 2.2).

[31] Like in the case of mandative *to*-clauses (cf. note 28), the data do not include instances of mandative *that*-clauses with a perfect *should* form. The following example is mine.

(v) 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.

(1.75) 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. Nicole heard a scuffing sound behind her and, when she looked round, saw Chavez, hands on hips, gulping down mouthfuls of air as she struggled to catch her breath. (CB, ukbooks)

We can thus conclude that apart from the lexical 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 the adjectives central to this study, but also other types of expressions, such as modal auxiliaries and the imperative mood. Before I present an outline of the rest of this study, in which the conceptual map plays a crucial role, I will take a closer look at the **division of labour** between these various expressions. The following figure, in which the conceptual map has been redrawn as a Venn diagram with four circles, shows which type of 'labour' each type of expressive decive is able to do.

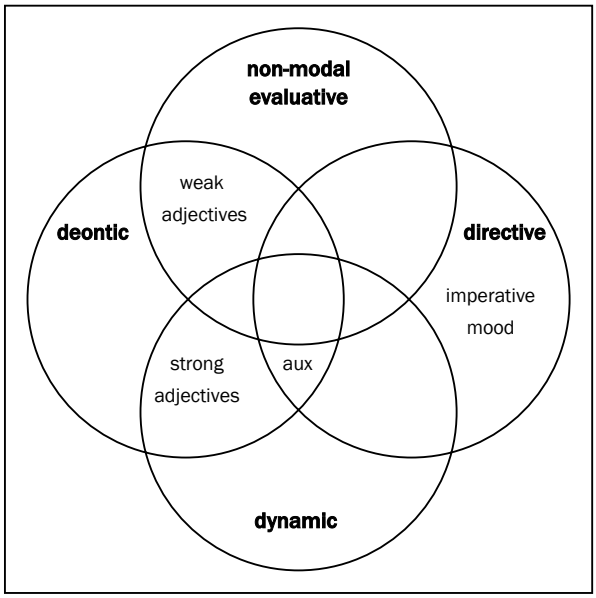

Figure 1.7: The types of expressive devices and their labour potential

As can be seen in Figure 1.7, the modal auxiliaries are most central in the diagram, though not in the intersection of all four circles. In fact, they cannot be used to express non-modal evaluative meaning. The least polyvalent device is the imperative mood, for it can perform only one type of labour, viz. the expression of directive meaning. Intermediate (in terms of polyvalence) between the imperative mood and the modal auxiliaries are the adjectives

studied here. (This is why in the conceptual map the lexical boundaries separate the modal auxiliaries from the adjectives studied to the left and from the imperative mood to the right.) Weak adjectives are found in the intersection of deontic and non-modal evaluative meaning, whereas strong adjectives are found in 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, viz. they can express non-modal evaluative meaning. Therefore, this diagram shows that the study of modality and evaluation should not be restricted to modal auxiliaries or mood types. With this study on adjectival expressions I thus hope to contribute to a better and broader understanding of the modal-evaluative realm.

2.3.2 The conceptual map in this study

As the central thesis of this study, the **conceptual map** will be the **backbone** of the following chapters; they will present further arguments for its utility, validity, and internal consistency. After a short chapter on data and methods (chapter 2), the three next chapters concentrate on its diachronic validity, focusing on the adjectival matrix (chapter 3) and the clausal complementat patterns (chapters 4 and 5). The sixth and final chapter elaborates on the synchronic arguments for the map, and it will deal with both matrices and clausal complements. Apart from adducing evidence in favour of the conceptual map, the chapters also give indications of the relative importance of the two parameters at work in its conceptual plane. As mentioned above, the present chapter, which has a theoretical focus, has argued that in conceptual terms the parameter of the presence or absence of an attitudinal source is most salient. Chapters 3 to 6, however, which are driven by data rather than by theoretical considerations, will conclude that the parameter of factuality is more salient. Ultimately, it will be argued that the delineation between dynamic and deontic modality is not as clear-cut as presented in the literature, e.g. in the work of Nuyts and collaborators. In what follows, I present an outline of each chapter and I point out how it relates to the conceptual map.

Chapter 2 discusses the data and methods used in this study. It details how the various adjectives were selected and in which corpora they were searched for, both diachronic and synchronic. In addition, it provides further evidence for the lexico-semantic distinction between weak and strong adjectives.

In chapter 3, I discuss the semantic development of the adjectival matrix. More specifically, I will present four case studies of strong adjectives that have acquired deontic meaning from various types of non-modal meaning. The adjectives studied are the Romance loans *essential*, *vital*, *crucial* and *critical*. The studies will show that the first type of modal meaning these adjectives come to express is invariably situational dynamic meaning, with deontic meaning developing from this dynamic meaning in a process of subjectification (Traugott 1989). Thus, this chapter will offer arguments for the diachronic validity 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 (viz. dynamic modality) in addition to their original non-modal meanings. Therefore, these semantic developments can be characterized as an upward movement in the conceptual plane of the map. It will also be noted that the process of subjectification has no formal reflexes, so that it may be hard to see the parameter of the presence or absence of an attitudinal source at work. Chapter 3 does not include case studies of weak adjectives, but it will be shown in chapter 5 that for weak adjectives, constructions with deontic meaning precede those with non-modal evaluative meaning. In this sense, the diachronic data confirm the upward movement in the conceptual plane for weak adjectives as well.

In chapters 4 and 5, I will concentrate on the diachrony of the clausal complement patterns found with the adjectives studied here by use of historical corpus data. Chapter 4 presents a general diachronic account of the adjectival constructions. Most notably, it will examine the development of the two most frequent formal types of clausal complement, viz. *that*- and *to*-clauses. It will be shown that the formal distinction between *that*- and *to*-clauses cross-cuts the semantic distinction between mandative and propositional complements throughout the various historical stages, thus illustrating the diachronic validity of the conceptual map. The data of the *that*-clauses also bear out the decrease of subjunctive forms, a development which has been well described in the literature. Furthermore, I will also investigate the distribution of *that*- and *to*-clauses across time. I will show that the *to*-infinitive rises in frequency at the expense of the *that*-clause in the Middle English period, as has been observed with verbal matrices by Los (1999, 2005). I will argue that this replacement can be explained by analogy between adjectival and verbal matrices. 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.

Whereas chapter 4 builds on topics that have been discussed in the literature on complementation with verbal matrices, chapter 5 presents new insights into the domain of adjectival complementation. A first contribution involves a type of construction that has not been mentioned so far, viz. the post-adjectival infinitive construction. Two examples are given below.

(1.76) In a Month's time, if the Vessel holds about eight Gallons, it will be fine and **fit** to bottle, and after bottling, will be **fit** to drink in two Months: but remember, that all Liquors must be fine before they are bottled, or else they will grow sharp and ferment in the Bottles, and never be good for any thing. (CLMETEV 1732 Bradley, *The country housewife and lady's director*)

(1.77) the language of nature variously modified and corrupted by passions, prejudices, and habits; the language of simulation and dissimulation: very hard, but very **necessary** to decipher. (CLMETEV 1750 Chesterfield, *Letters to his son*)

Whereas the constructions shown in the examples are traditionally analysed as *tough*-constructions, I claim that they can be divided into two semantically and syntactically

distinct types, viz. characteristic-oriented and activity-oriented constructions. More specifically, in the first type, illustrated in (1.76), the adjective modifies the entity 'liquor', and evaluates its characteristics as being fit with regard to two activities (bottling and drinking) after a certain period of time. Syntactically, this construction involves object deletion. In the second type, illustrated in (1.77), the adjective modifies the activity of deciphering the language of simulation and dissimulation as necessary. Syntactically, this construction involves object raising. I will argue that the first type is merely evaluative,[32] whereas the second type has a deontic flavour. Apart from this conceptual distinction, lexical distinctions are also at work here. Weak adjectives can be used in both characteristic-oriented and activity-oriented constructions, whereas strong adjectives are restricted to activity-oriented constructions. I will therefore conclude that the data offer arguments in favour of the cross-constructional validity of the conceptual map, i.e., they show that the conceptual map applies to both the extraposition and post-adjectival infinitive construction.

The second contribution concentrates on the development of propositional complements with adjectival matrices, and it elaborates on the diachronic validity of the conceptual map. A case study of weak adjectives of Romance origin 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 adopting 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 diachronic validity of the map. In addition, the case study will show that according to the literature on complementation, the distinction between modal and non-modal evaluative meaning is more salient than that between attitudinal and non-attitudinal (situating) meaning.

In chapter 6, finally, I will show the synchronic validity of the conceptual map on the basis of qualitative and quantitative analyses of Present-day English data from the COBUILD Corpus. These data will illustrate the interplay between the conceptual and lexical boundaries in the map. As mentioned above, constructions with weak adjectives are restricted to deontic and non-modal evaluative expressions, whereas constructions with strong adjectives occur mainly in deontic and dynamic expressions (and very marginally in non-modal evaluative expressions also). Moreover, the analyses allow us to propose refinements of the conceptual map, and to specify the internal organization of its categories. Within the category of deontic modality, for instance, I will put forward a distinction between SoA-related and speaker-related expressions. The first type includes structures which express the desirability of carrying out an SoA, such as (1.78), whereas

[32] It should be noted that this type of evaluative meaning is different from (but not unrelated to) the type of non-modal evaluative meaning introduced above. A further characterization of this new type of evaluative meaning will be given in chapter 5, section 1.2.

the second type contains structures that are used to serve the argumentative purposives of the speaker, such as (1.79) and (1.80).

(1.78) Investors often do not take enough time to make the best choice. There are plenty of advisers to choose from and it is **crucial** to shop around. Obtaining introductions is easy enough. (CB, times)

(1.79) 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)

(1.80) It is **important** to remember that from 22nd November most BT numbers will be transmitted, including those which are ex-directory and those from BT payphones. Your number may be sent on certain switchboards, so it may be sent to various companies. (CB, ukephem)

In (1.79), the deontic expression is used to indicate the structure of the discourse; this type of use will be termed 'text-building use' in chapter 6, section 3.1.1. In (1.80), the speaker uses the deontic expression to make the hearer focus mentally on the propositional content of the secondary *that*-clause. Examples like (1.80) also have a specific constructional make-up, viz. a combined pattern of complementation consisting of a mandative *to*-clause as primary complement, expressing a mental action (viz. *to remember*), which is in turn complemented by a secondary *that*-clause. I will argue that such expressions qualify as partially filled constructions, which will be termed deontic 'mental focus constructions' in chapter 6, section 3.1.2. The examples in (1.79) and (1.80) illustrate the two subtypes of speaker-related deontic meaning. Within the group of SoA-related expressions with strong adjectives, it will prove difficult to assign some examples to either deontic or dynamic modality. Although this problem does not invalidate the conceptual distinction between the two modal categories, the data again suggest that the parameter of factuality is more salient than that of the presence or absence of the attitudinal source. More generally, in refining the conceptual categories of the map, I will also take account of the distribution of the adjectives studied here across the various subtypes. It will thus become possible to indicate how they divide the modal-evaluative domain among each other.

Chapter 2
Data and methods

This chapter details the data and methods used in this study. As pointed out in chapter 1, the distribution of adjectives across dynamic, deontic and non-modal evaluative types of meaning is determined in terms of two semantically coherent sets, viz. weak and strong adjectives. This distinction between weak and strong adjectives has already been made on intuitive grounds (cf. chapter 1, section 2.1). In this chapter, I will adduce further arguments for it (section 1). In addition, I will introduce the diachronic and synchronic dataset and the corpora used for this study (section 2). I will show that serious changes have taken place in the inventory of adjectives qualifying for this study, and that these changes motivate the selection of adjectives used in the case-studies presented in the next chapters. Finally, I will focus on the data and methods used for the synchronic study reported on in chapter 6, including a multiple distinctive collexeme analysis (section 3).

1 The distinction between weak and strong adjectives

The main value of the lexico-semantic distinction between weak and strong adjectives lies in its interaction with the conceptual distinctions at work in the conceptual map presented in chapter 1. More precisely, the two sets show different patterns of polysemy, in that weak adjectives are found in deontic and non-modal evaluative expressions, whereas strong ones occur in deontic and dynamic constructions. In what follows, I will provide further arguments to distinguish between the two sets, viz. scalarity tests, the distribution of types of matrix finites, 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. Within the domain of deontic modality, for instance, adjectives like *vital* in (2.1) express a stronger degree of desirability than *appropriate* in (2.2) (cf. Övergaard 1995: 85; Huddleston and Pullum 2002: 997). This intuitive finding assumes that items such as *appropriate* and *vital* take particular positions on a scale of desirability. Therefore, 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). In fact, native speakers judge expressions such as (2.3) as felicitous, with *appropriate* having a weaker meaning than *necessary*. Expressions such as (2.4), by contrast, are rejected, as the weaker meaning of *appropriate* clashes with the 'and even' coordination with stronger *vital*.[1]

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[1] In addition, similar expressions with two weak adjectives or two strong ones were rejected as well, such as (i) and (ii).

(i) *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

(2.1) 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 and indeed most onlookers feel that the situation has worsened considerably. 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)

(2.2) 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. Why Trevor mcdonald? Six months of research went into the changes and Trevor emerged as a person who was respected, carried weight and authority and who was liked and trusted. (CB, today)

(2.3) 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. Why Trevor mcdonald? Six months of research went into the changes and Trevor emerged as a person who was respected, carried weight and authority and who was liked and trusted.

(2.4) *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 and indeed most onlookers feel that the situation has worsened considerably. It is **vital** and even appropriate that the ongoing 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.

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 in past contexts, indicating posteriority with regard to a past time of orientation, as illustrated in (2.5), or in certain conditional settings, as shown in (2.6). In constructions with weak adjectives, however, *would* is – in addition to the contexts found with strong adjectives, cf. (2.7) and (2.8) – also used in present contexts, in which its hypothetical flavour attenuates the deontic meaning of the construction as a whole. In (2.9), 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.

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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.

(ii) *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. President F.W. Frederik) De Klerk has ordered South Africa's Law and Order Minister, Adriaan Vlok, to carry out an urgent and in-depth investigation into the police.

(2.5) 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)

(2.6) 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)

(2.7) 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)

(2.8) 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, ukbooks)

(2.9) 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. Setting a lower limit will distract police time and resources from pursuing serious offenders." (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 (2.10) and (2.11) respectively.

(2.10) 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 [i.e., Shirley Bloomer's horse, AVL.] was good enough. She was the first horse Brasher bought solo, whittling down a sales catalogue from 1,000 to six [...]. (CB, times)

(2.11) 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> <F09> because half of your congregation'll probably have heart failure. (CB, ukspok)

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. In fact, the adjectives pattern with *if*-clauses only if the matrix finite has a hypothetical meaning, such as *would* in (2.10). 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 chapter 1, section 2.2.2), the construction with an *if*-clause in (2.10) cancels this "factive" interpretation (Noonan 2007: 115, cf. Huddleston and Pullum 2002: 1254). In addition to the distribution of *if*-clauses, weak and strong adjectives also differ in the occurrence of gerundial complements. The gerund in (2.11) 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 further arguments to distinguish between weak and strong adjectives. The results of some scalarity tests substantiated the intuitive finding that strong adjectives express a stronger degree of desirability than weak ones. In addition, I presented distributional evidence in terms of matrix finites and formal types of complements other than *that*- and *to*-clauses.

2 The data and the corpora used

This section presents the diachronic and synchronic data and corpora used for this study. I will first concentrate on the collection of data in section 2.1, and I will show that the set of adjectives studied has changed considerably across the various historical periods as distinguished in the diachronic literature, especially up to Early Modern English. In section 2.2, I will give more details on the corpora used.

2.1 The data

As mentioned above, this study investigates adjectives that express a particular meaning within the positive sphere of the deontic modal domain. In particular, it is concerned with adjectives that denote various degrees of goodness, properness, desirability or necessity. On the basis of these semantic notions, I collected the Present-day English dataset of adjectives, given in chapter 1, section 2.1 and in the bottom row of Table 2.1 below, by use of *Roget's Thesaurus* (1970) together with the online *Oxford English Dictionary* (OED). These adjectives also served as a starting point for the diachronic onomasiological search for lexical items. More precisely, I used these adjectives in several thesaurus environments to find their historical counterparts. For Old and Middle English I used the online *Thesaurus of Old English* (TOE) and the *Middle English Dictionary* (MED). For the Early and Late Modern English period, I also used *Roget's Thesaurus* (1970) and the online version of 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 results of the corpus searches are given in Table 2.1, which shows the adjectives that were

investigated per period, with the number of tokens between brackets.[2] In addition, the table also distinguishes between weak and strong adjectives.

Period	Strength	Adjectives
OE (2,335)	weak (2,220)	andfenge (23), arlic (5), (ge)beorh (1), (ge)beorhlic (6), bryce (3), (ge)cop (1), (ge)coplic (2), (ge)cweme (61), (ge)cynde (28), (ge)cyndelic (37), cynn (7), (ge)dafen (2), (ge)dafenlic (33), (ge)defe (4), (ge)defenlic (1), fremgendlic (3), fremful (10), fremfullic (2), geornlic (5), god (1,733), (ge)limplic (17), (ge)mæte (4), medeme (15), (ge)met (4), (ge)metlic (9), nytlic (7), nytt (28), nyttol (1), nytweorðe (33), nytweorðlic (2), (ge)radlic (3), rædlic (1), rihtlic (53), (ge)risenlic (14), (ge)risne (14), (ge)screpe (4), (ge)tæse (1), til (4), þæslic (14), (ge)þungen (25)
	strong (115)	behefe (6), beheflic (1), neadwis (1), niedbehæfdlic (1), niedbehefe (14), niedbehof (4), (ge)niededlic (1), niedþearf (24), niedþearflic (19), þearf (40), þearflic (4)
ME (3,187)	weak (3,067)	able (33), aise (3), bicumelich (28), comely (3), commendable (2), competent (3), convenient (8), covenable (30), desiderable (5), desirable (1), expedient (5), fremful (6), good (2,525), goodly (29), helply (2), just (30), kendeli (37), lele (2), limplich (1), medeme (3), (i)mete (5), profitable (42), proper (4), (i)queme (62), rightful (133), semeli (18), servisable (2), skilful (11), vertuous (34)
	strong (120)	behefe (19), beheflic (1), behofsam (1), behoveful (1), behovely (4), necessarie (23), needly (1), niedful (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 (7,454)	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 (2,304)	critical (120), crucial (193), essential (478), indispensable (16), necessary (1,032), needful (41), vital (439)

Table 2.1: The adjectives under investigation

As can be seen in Table 2.1, the set of adjectives is rather different for Old, Middle and Modern English. In particular, it is possible to distinguish between **three groups** of

[2] It is clear from Table 2.1 that up to Early Modern English the adjective *good* is far more frequent than all the other adjectives. However, its occurrence in the constructions looked at here is not so frequent compared to the total amount of attestations. In addition, its distributional development of semantic and formal types of complements up to EModE is also comparable to that found with the other adjectives (see Van linden 2008b). We can thus safely conclude that the data of *good* do not distort the overall picture.

adjectives on the basis of their relative diachronic availability or existence 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, finally, 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.[3] The three groups of adjectives are represented in Table 2.2 below.

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

Table 2.2: Three groups of adjectives and their diachronic availability

Interestingly, Table 2.2 makes it clear that there has been a **changing of the guard** in the lexical field studied: 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. Rather, 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, Burnley 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, viz. dynamic, deontic and non-modal evaluative meaning. More precisely,

[3] It can be noted that within this third group some changes have taken place. In fact, 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.

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 3, and those of the development of non-modal evaluative meaning, presented in chapter 5, section 2 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 justification for the selection will follow in the relevant sections.

2.2 The diachronic and synchronic corpora

The diachronic and synchronic corpora used for this study are listed in Table 2.3 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 et al. 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 concentrate on the queries I used to search the corpora, and on the glosses I provided for the Old and Middle English data.

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

Table 2.3: The corpora used for each subperiod and their number of tokens (mln: million)

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.

Rather, it is biased towards religious prose on the one hand and the Southern dialects on the other, especially West-Saxon, for example by the many and large samples of texts by Ælfric (*c*955–1010). It should be noted, however, that this dialectal bias reflects the earliest standardization attempts, initiated in the days of King Alfred (*c*849–901), through which West-Saxon developed into a supraregional dialect (Nevalainen and Tieken-Boon van Ostade 2006: 271). Table 2.4 presents the number of tokens 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* (DOE) 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.[4] In the general counts of Old English constructions in chapter 4, I relied on the YCOE periodization.

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

Table 2.4: The subperiods of the YCOE and their number of tokens

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 Tieken-Boon van Ostade 2006: 274–275). All in all, the PPCME is more balanced than the YCOE. Its subperiods and their number of tokens are given in Table 2.5. 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 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

[4] The manuscript of *Bede's History of the English Church*, for instance, dates from 1050–1099 according to Ker (1957) (cf. (2.13) below), but in the YCOE the text is assigned to the period 850–950.

given date by 25 years and *a* ('*ante*') indicates a date within the 25 years preceding the given date. A question mark, finally, indicates doubtful or uncertain information.

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

Table 2.5: The subperiods of the PPCME and their number of tokens

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 within the (second) standardization process started in the Middle English period, as described in Nevalainen and Tieken-Boon van Ostade (2006: 277–282). The three subperiods and their number of tokens per subpart are presented in Table 2.6. 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.

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

Table 2.6: The subperiods and subparts of the PPCEME and their number of tokens

For the case-study of the development of propositional complements presented in chapter 5, section 2, however, I used a larger EModE corpus, viz. 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.[5] Table 2.7 details the number of tokens of its three subperiods. Again, for all examples given in the following chapters I will identify the author, title and date of publication of the source text (or that of composition in the case of letters).

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

Table 2.7: The subperiods of the CLMETEV and their number of tokens

The **Present-day English** data, finally, 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 texts and samples date from 1990 until roughly 1995. It should be noted that for the case-study on the post-adjectival infinitive construction presented in chapter 5, section 1, I used extra COBUILD subcorpora including Australian and American data. All subcorpora and their number of tokens are presented in Table 2.8. For the CB examples included in this study, the subcorpus has been indicated between brackets. In addition to the CB data, I have occasionally used examples from the Internet as Present-day English data. In these cases, I provided 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. The calculations of these frequencies are based on the number of tokens given for each corpus and period in the tables above. In general, in the following chapters frequencies are computed on the basis of the adjectival matrix. More specifically, 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.

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

Subcorpus	Description	Number of tokens
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	*The Times* and *The Sunday Times*, quality newspaper published in London	5,763,761
sunnow	*The Sun*, popular newspaper published in London	5,824,476
today	*Today*, popular newspaper published in London	5,248,302
total British English data		42,099,593
oznews	Australian newspapers published in Brisbane (Australia)	5,337,528
usephem	Ephemera produced in the USA	1,224,710
usbooks	Books published in the USA (fiction and non-fiction)	5,626,436
npr	National Public Radio broadcasts, Washington (USA)	3,129,222
total COBUILD data		57,417,489

Table 2.8: The subcorpora of the COBUILD corpus and their number of tokens

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 2.1 above, of which I took exhaustive samples. For two adjectives in LModE only, viz. *good* and *necessary*, queries were limited to the adjectives immediately followed by *that*, *to* and *for*, as the total number of tokens would otherwise have become unmanageable. For the PDE data, I also used a special design of query to avoid as much noise as possible. In particular, 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 transitive extraposition constructions (e.g. *I think it essential that*… or *it was thought essential that*…), I combined the adjectives with eleven verbs, viz. *believe*, *consider*, *deem*, *feel*, *find*, *hold*, *judge*, *make*, *render*, *see* and *think*. In search for PDE post-adjectival infinitive constructions (see chapter 5, section 1), finally, I looked for *good*, *fit* and *necessary* followed by *to* or *for*. All the data were managed in the computer tool *Abundantia Verborum* (Speelman 1997).

To conclude, in order to make all corpus data accessible to the reader, I will provide **glosses** for the Old and Middle English corpus examples. In most examples, these are fairly general, with inflected noun phrases being glossed with a PDE preposition (if necessary), as shown by the *of.king* gloss given for the genitive case-marked noun *ciningce*s in (2.12) below. In examples where case-marking is important, the glosses include reference to these cases. Likewise, verb phrases are translated into their Present-day English counterparts; only if the mood type of the finite is relevant, for example in dependent *that*-clauses, it receives a more specific gloss, as illustrated in (2.13). In citing examples glossed by the cited author, I sometimes adjust his/her glosses so as to make the glossing practice consistent. Such minor changes or additions are indicated between square

brackets, as shown in (2.14). 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 page xiv.

(2.12) Cristenes ciningces handgrið
of.Christian of.king handgrith
'the Christian king's handgrith' (YCOE 1040–1060 LawICn 2.2)

(2.13) Wæs þæt eac gedefen, þætte þæt swefn gefylled wære,
was that also fitting, that that vision fulfilled be.PAST.SUBJ
'That was also fitting, that that vision was fulfilled' (YCOE 1050–1099 Bede 4 24.336.28)

(2.14) ic eom sona gearo þæt ic gange to minum discipulum
I am at-once ready that ic go[.PRES.]SUBJ to my disciples
'I am now ready to go to my disciples' (LS 1.1 (Andrew Bright) 306, cited in Los 2005: 172 (39b))

3 Data and methods used in chapter 6

Chapter 6 concentrates on Present-day English constructions and seeks to refine the conceptual map presented in chapter 1, section 2.3. It thus investigates directive meaning also (see chapter 1, sections 1.1.2 and 2.2.2), for which **additional data** have been examined. The set of Present-day English adjectives including the directive adjectives is presented in Table 2.9 below. In the table, the directive items are in roman type, whereas the adjectives central to this study and listed in Table 2.1 above are in italic type.

weak adjectives (12)				strong adjectives (10)			
Adjective	Freq	Adjective	Freq	Adjective	Freq	Adjective	Freq
advisable	70	*fitting*	37	compulsory	17	*necessary*	200
appropriate	133	*good*	200	*critical*	12	*needful*	21
convenient	33	*important*	200	*crucial*	52	obligatory	9
desirable	31	*profitable*	7	*essential*	200	*vital*	200
expedient	8	*proper*	25	*indispensable*	2		
fit	49	*suitable*	5	mandatory	3		

Table 2.9: The weak and strong adjectives in the PDE samples in chapter 6

Chapter 6 not only uses a more expanded Present-day English dataset than chapters 4 and 5, it also uses additional types of analysis. Whereas in the other chapters the adjectives listed in Table 2.1 are used in exhaustive samples of *that*- and *to*-clause constructions, the discussions in chapter 6 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 2.9, in either exhaustive samples (smaller than 200), or samples of 200 instances from the COBUILD corpus. It should be noted that the **sampling** of these last sets was not entirely random. In fact, I took account of the distribution of types of matrix

constructions (copular or transitive extraposition constructions, cf. section 2.2 above), that of *that*- and *to*-clauses, as well as that of mandative and propositional complements of the exhaustive samples (i.e. the analyses of chapters 4 and 5) so as to render the 200-item sets as representative as possible. The frequencies of the adjectives in the samples studied in chapter 6 are given in Table 2.9 as well.

In addition, chapter 6 also uses a type of collostructional analysis, viz. a **multiple distinctive collexeme analysis** (Gries and Stefanowitsch 2004). 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 2.9 from the COBUILD corpus, but it includes only constructions with extraposed *to*-clauses. For each adjective, the number of tokens is given in Table 2.10.

advisable	66	*desirable*	23	*important*	969	*profitable*	7
appropriate	323	*essential*	121	*indispensable*	2	*proper*	18
compulsory	15	*expedient*	8	*mandatory*	3	*suitable*	3
convenient	32	*fit*	49	*necessary*	478	*vital*	79
critical	5	*fitting*	6	*needful*	10		
crucial	23	*good*	278	*obligatory*	9		

Table 2.10: The adjectives and their number of *to*-clauses included in the multiple distinctive collexeme analysis

The analysis is called a multiple distinctive collexeme analysis in that it takes 22 different constructions into account (viz. the extraposition construction 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 adjectives other than A (¬A), (iii) the frequency of A with *to*-infinitives other than I (¬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 2.11.

	extraposition construction with A		extraposition construction with ¬A		row totals
to-infinitive I	(i)	Freq (I+A)	(ii)	Freq (I+¬A)	Freq (I)
¬I	(iii)	Freq (¬I+A)	(iv)	Freq (¬I +¬A)	Freq (¬I)
column totals		Freq (A)		Freq (¬A)	Freq (I+¬I) = Freq (A+¬A)

Table 2.11: The frequencies needed for a collexeme analysis (based on Stefanowitsch and Gries 2005: 6, Table 1)

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 2.12, 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. Importantly, 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 2.12 shows that *remember* is most strongly attracted to the extraposed *to*-infinitive constructions 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 α=0.05 (Stefanowitsch and Gries 2003: 239, note 6). As frequency is an important factor determining the degree to which a particular construction is entrenched (cf. Goldberg 1999), the results of the multiple distinctive collexeme analysis will be used in chapter 6 to adduce evidence for a number of partially filled constructions involving the adjectives studied here.

Distinctive for A (**attracted**)				Distinctive for B (**repelled**)			
Collexeme	Obs. Freq. in A	Obs. Freq. n B	Fisher Yates p-value	Collexeme	Obs. Freq. in A	Obs. Freq. in B	Fisher Yates p-value
remember	46	6	3.12E-12	see	11	74	2.52E-09
realize	18	0	1.70E-07	be_locative	1	26	6.81E-06
note	21	2	1.14E-06	go	5	26	1.77E-03
try	23	6	4.85E-05	make	11	33	1.27E-02
understand	22	6	9.27E-05	hear	0	7	2.12E-02
make_sure	15	2	1.16E-04	meet	0	6	3.68E-02
stress	11	1	5.51E-04	obtain	0	5	6.39E-02
recognize	15	4	1.23E-03	travel	0	5	6.39E-02
verb_perspective	7	0	2.38E-03	use	5	16	6.40E-02
feel	6	0	5.66E-03	discuss	2	9	9.09E-02

Table 2.12: The collexemes most strongly attracted to and repelled by the *to*-infinitive slot of the extraposed *to*-infinitive construction with *important* (cf. chapter 6, Table 6.24)

4 Conclusion

This chapter bridges the theoretical introduction to the domain of modality and evaluation presented in chapter 1 and the discussion of my diachronic and synchronic research in the following chapters. It has elaborated on the lexico-semantic distinction between weak and strong adjectives, which confirmed the conceptual distinctions in the conceptual map (see chapter 1, section 2.3), and which itself will be corroborated in the remainder of this study. In addition, I have outlined the historical and Present-day English data on which the analyses proposed in the following chapters are based, and the various diachronic and synchronic corpora, from which these data have been extracted. We can now thus turn to the more data-oriented part of this study, starting with an investigation into the development of deontic meaning in the adjectival matrix.

Chapter 3
The semantic development of the adjectival matrix

This chapter is concerned with the diachronic validity of the conceptual map presented in chapter 1. In terms of the clausal complement constructions studied here, it concentrates on the development of the adjectives that are part of the matrix. The development of the clausal complements will be dealt with in chapters 4 and 5, whereas the constructional whole of matrix and complement will be discussed in chapter 6. This last chapter will take a synchronic perspective.

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 et al. 1994; Hansen 1998, 2004; Van der Auwera and Plungian 1998; Traugott and Dasher 2002: ch. 3; Loureiro Porto 2005). As discussed in chapter 1, 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 chapter 1, section 2.3.1 on the division of labour among the various types of expressive devices). 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. As with the modal verbs, the lexicon-syntax interface thus plays an important role in the semantic development of the adjectives as well.

Apart from the dynamic-deontic development, which mirrors that of modal verbs, this chapter will also offer a number of new insights. In particular, 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 Ostayen 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'. At this stage, the meaning of the adjectives has become associated with the notion of (situational) necessity. I will thus argue that these two semantic properties constitute the conditions of entry into the conceptual map. In fact, it will also become clear that the property of relationality forms the semantic condition for complementation. Furthermore, 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.

The structure of this chapter is as follows. In section 1, I will discuss the data and account for the choice of the adjectives that are investigated in detail here. In sections 2 to 5, I will present four case-studies of strong adjectives. In these sections, I will focus on the semantic properties of relationality and potentiality (leading to dynamic meaning), and also desirability (leading to deontic meaning) in order to explain the change from non-modal, descriptive meaning to deontic meaning. In section 6, finally, I will present my conclusions, and I will also briefly reflect upon the semantic development of the weak adjectives.

1 The data: Romance loans

In chapter 2, section 2.1, 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. More specifically, the case-studies in the next sections deal with the 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 (3.1). In the Present-day English example (3.2), *essential* is used in a deontic expression, as defined in chapter 1, section 2.2.3.

(3.1) þe **Escencyalle** ioy es inþe lufe of Godd [...].
the essential joy is inthe love of God
'The essential joy is in the love of God' (PPCME *c*1440 ?Rolle þi ioy (Thrn) 17)

(3.2) 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 2.3 in chapter 2, section 2.2, to corroborate the findings.

2 The semantic development of *essential*[1]

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. The first change is that from its original meaning to a relational type of meaning (discussed in section 2.1). The second change is that to (situational) dynamic modal meaning, for which the development of the feature of potentiality is crucial (discussed in section 2.2). The third and final change involves the development of the property of desirability on SoA-external grounds, and gives rise to deontic modal meaning (discussed in section 2.3). It will also be argued that the main driving factors of these semantic changes are patterns of co-occurrence and subjectification.

2.1 From 'being such by its true nature' to 'constituting the true nature of': the development of relational meaning

Essential is not a Germanic word, but it was borrowed into English from Latin in the 14th century. According to the OED, *essential* is an adaptation of the Late Latin word *essentialis*, which in turn derives from the noun ***essentia*** 'essence' (OED, s.v. *essential*). The original meaning of *essential* can be paraphrased as 'being such by its true nature', or 'being such in the true sense of the word'. The OED gives "that is such by essence, or in the absolute or highest sense" (OED, s.v. *essential*).

(3.3) For þe souerayne and þe **Escencyalle** loy es inþe lufe of Godd by hym-selfe
for the sovereign and the essential joy is inthe love of God by himself
and for hym-selfe, and þe secundarye es incomonynge and byhaldynge
and for himself, and the secondary is incommuning and beholding
of Aungells and gastely creaturs.
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 communing and the beholding of Angels and ghostly creatures' (PPCME c1440 ?Rolle þi ioy (Thrn) 17)

In this example, the adjective *essential*, like *secondary*, indicates a type of joy. In this sense, it functions as a classifier[2] and not as an attribute of the noun *joy*. Semantically, classifiers denote 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

[1] This section is based on Van linden et al. (2008: 231–240).
[2] Classifiers can be opposed to attributes, which assign a (typically gradable) quality to the instance referred to by the NP, as in *new* in *a new car*, or *beautiful* in *a beautiful car*) (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. Further, since classifiers do not attribute a quality to the referent of the NP, but rather modify the reference of the head noun (Bolinger 1967a:

(Halliday 1994: 185). In fact, the two types of joy in (3.3) are opposed to each other, and thus presented as mutually exclusive and exhaustive sets of joy: *essential joy* (meaning 'true', 'basic', 'substantial' or 'primary' joy) versus *secondary joy* (meaning 'derived', 'accidental' joy). This original sense of *essential* is clearly not deontic. In its pathway to deontic meaning, the first semantic extension involves the development of **relational meaning**. This type of meaning is illustrated in (3.4) below.

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

In (3.4), sensibility and a locomotive faculty are said to constitute the essence of every living creature. This use of *essential* is relational because it does not indicate a type of something (e.g., a type of joy as in (3.3)), but serves to relate two concepts, viz. sensibility/locomotion and life. Whereas the original sense of *essential* is still taxonomic, in that it applies to types, the relational meaning is clearly partonomic, in that it applies to parts in relation to a whole. This change is also reflected in the syntactic potential of the adjective: it is not a classifier, but now functions as an attribute in predicative function, and it can take a prepositional complement.

If we look at the relative timing of these two uses, we can find the **diachronic bridge** between the original classifier use in (3.3) and the later relational use in (3.4) in structures in which the classifier co-occurs with relational nouns like *property*, *attribute* or *part*. The earliest instance of this pattern dates from 1596 and is given in (3.5). (3.6) and (3.7) appear about twenty years later, but are clearer examples. The earliest attestation of *essential* with relational meaning in non-classifier use dates from 1628 (*Such argument*s *as be* ***essentiall*** *vnto the thing, of which they are predicate* (OED 1628 Spencer, *The art of logick* 26)).

(3.5) those **essentiall** parts of his [refers to God's, AVL], His truth, his love, his wisedom, and his blis. (OED 1596 Spencer, *Fowre hymnes* (in honour of heavenly beautie) xvi)

(3.6) Heate is the **essentiall** propertie of fire (OED 1620 Granger, *Syntagma logicum, or the divine logike* 66)

(3.7) Mercy as it is Radically in God and an **essentiall** attribute of his. (OED *a*1631 Donne, *Sermons* (1953) VI. 170)

In these three examples, *essential* functions as a classifier with the relational nouns *part, property* and *attribute*, which denote a part within a larger whole. Relational nouns like these are different from other nouns in that they make schematic reference to another thing (the whole), and have the conception of a relationship with this other thing as a background (the part-whole relationship), just like the noun *father* (the male parent) makes schematic reference to offspring on the basis of the parent-offspring relationship

14–15), they are not gradable, i.e., they "do not accept degrees of comparison or intensity" (Halliday 1994: 185).

(cf. Langacker 1991: 38–39). This is what makes co-occurrence with relational nouns critical to the development of relational meaning of the adjective itself. With relational nouns, the paraphrase proposed for the original use of *essential* in (3.3) cannot be applied anymore. In (3.6), for instance, *essentiall propertie* does not mean 'that is a property in the true sense of the word', or 'that is a property by its true nature'. Rather, the part-whole relationship in the background of *property* provides a better paraphrase: 'a property of the essence of fire', or 'a property constituting the essence of fire'. Schematically, 'an essential property of Y' corresponds semantically to 'a property of the essence of Y'. In this sense, it can be argued that relational nouns like *property* or *attribute*, which are based on a part-whole or inclusion relationship, are semantically permeable and therefore able to transfer their relational property to the adjectives that classify them.

Analogous examples can illustrate the semantic correspondence between the two paraphrases given above and the proposed **semantic permeability** of relational nouns such as *property* and *feature*. The following expressions have the same internal structure as (3.5) to (3.7) (classifier[3] + relational noun + *of*-PP postmodifier).

(3.8) His argument was that religion is a structural as well as a cultural feature of all societies and that its 'invisible' functions are no less important for not being empirically available for observation and measurement. (CB, ukbooks)

(3.9) The other most notable architectural feature of the town is the castle, situated on a promontory surrounded by a path, and overlooking a steep descent to the river and the weir. (CB, ukbooks)

In (3.8), for instance, religion is said to be a feature of the structure and culture of all societies. In (3.9), the castle is presented as one of the most notable features of the architecture of the town. In both paraphrases, the classifying adjectives permeate, as it were, the relational noun (*feature*) and enter into the latter's inclusion relationship with the head noun of the NP of the *of*-PP, viz. *societies* in (3.8) and *town* in (3.9).

The semantic permeability of the relational nouns actually implies that the meaning of *essential* in expressions such as (3.6) and (3.7) is relational as well. In (3.6), for instance, *essential* links *heat* with *fire*, as heat is said to constitute the essence of fire, and in (3.7), it links *mercy* with *God*, as mercifulness is argued to constitute the essence of God. Thus, heat is essential to fire, and mercy is essential to God. In (3.6) and (3.7), then, *essential* establishes a relation of inclusion between two concepts, which is not the case in (3.3), in which it denotes a sub-class of the non-relational noun *joy* (*joy* cannot be

[3] Evidence for the argument that the semantic correspondence only applies to NPs with a classifier can easily be found in trying to paraphrase NPs in which the prenominal adjective does not function as a classifier, but rather as an attribute. Consider the following expression.

(i) Another **Important** feature of the hangover is the reduction in blood sugar level (hypoglycaemia) (CB, times).

It is clear that *another important feature of the hangover* can hardly be paraphrased as 'another feature of the importance of the hangover', and consequently, that there is no semantic correspondence.

paraphrased as being essential to something else). This is why we call the use of *essential* in the first stage of its semantic development non-relational (as in (3.3)) and in the second stage relational (as in (3.4) to (3.7)). As can be seen in (3.4), later relational uses of *essential* do not necessarily involve relational nouns: it has merely been argued that co-occurrence with relational nouns is a facilitating factor that forms a diachronic bridge between classifier non-relational uses and non-classifier relational uses. Importantly, as *essential* in its relational meaning links two concepts, the element to which something is said to be essential can be coded by a complement, such as the *to*-PP in (3.4).

From the perspective of deontic meaning, relationality as such does not yet imply deontic interpretation: (3.4) is no more deontic than (3.3). It does, however, form an enabling factor for the next step, the development of potentiality. As will be shown in the following section, once *essential* can establish links between concepts, these concepts need not be restricted to things and the type of relationship need not be restricted to inclusion.

2.2 From 'constituting the true nature of' to 'indispensable for': the development of dynamic meaning

Even if they are not deontic, relational uses of *essential* as in (3.4) to (3.7) do involve some sense of necessity. If certain properties or attributes are said to constitute the essence of something, they are necessary to it, for otherwise we might be dealing with just something else. However, this type of necessity differs from the classic dynamic-modal type of necessity, i.e. the necessity we experience when something is needed for a certain purpose. In what follows, I would like to propose the terms '**defining necessity**' for the first type of necessity as opposed to '**dynamic necessity**' for the second. I will argue that we can witness an extension from the sense of defining necessity to that of dynamic necessity in the semantic development of *essential,* in which the property of potentiality plays a key role.

What crucially distinguishes the two types of necessity proposed here is the notion of definition. The first type of necessity obviously is defining in nature, whereas the second type is not. Example (3.6), for instance, can be paraphrased as 'fire is (necessarily) hot', and (3.7) as 'God is (necessarily) merciful'. In these paraphrases, the predicates do not add any new information to the subject, but rather define it. Being hot, for example, is a defining feature of fire. In this sense, the paraphrases are analytical propositions, in which subject and predicate are linked by virtue of their intension. Furthermore, what is regarded as necessary in a defining way (e.g., *mercy* as necessary to *God* in (3.7)) is intrinsically present in it.[4] Finally, defining necessity applies to all instances of the type designated by the head noun to which something is said to be necessary: all fires, for instance, are hot.

[4] Note that this is highly determined by the speaker's *Weltanschauung*. An ancient Greek speaker, for example, would not see mercy as an essential attribute of god (e.g., Zeus).

Dynamic (modal) necessity, on the other hand, has very different semantic characteristics. Consider the following examples.

(3.10) 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*)

(3.11) When a philosopher (…) is obliged to have recourse to some very intricate and refined reflections, and to suppose them **essential** to the production of any passion or emotion, we have reason to be extremely on our guard against so fallacious an hypothesis. (CLMETEV 1751 Hume, *An enquiry concerning the principles of morals*)

In (3.10), 'practice' is not defining of 'perfection', and in (3.11), 'some very intricate and refined reflections' are not defining of 'the production of any passion or emotion'. In this sense, the examples are synthetic propositions, like *the fires are small*, in which the predicate is not linked to the subject by virtue of its intension, but adds new information about the subject. Furthermore, dynamic necessity does not really signal an inherent presence, such as the presence of mercy in God in (3.7), but rather the absence of something that is desirable, such as 'practice' in (3.10) and 'some very intricate and refined reflections' in (3.11). When something is regarded as necessary in a dynamic way to someone or something, it is needed or cannot be missed by that person or thing. Thus, it is possibly absent, but indispensable for a particular purpose. Therefore, the subtype of dynamic meaning involved here is situational in the sense defined in chapter 1, section 1.1.1: the necessity of 'practice' is inherent in the situation of reaching perfection, and the necessity of 'very intricate and refined reflections' is inherent in the situation of producing passion and emotion. In both examples, the necessity is thus indicated on the basis of SoA-internal grounds. Finally, as this type of necessity is not defining in nature, it does not necessarily apply to all instances of the type designated by the head noun to which something is said to be essential.

In this section, I will describe how *essential* enters the conceptual map through the development of (situational) dynamic meaning. More precisely, I will argue that the meaning of *essential* extends from the sense of defining necessity to that of dynamic necessity, and I will show that this extension can be attributed to the emergence of an element of **potentiality**. 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 modified by an evaluative adjective, or it is a potential action. In section 2.2.1, I will investigate the effect of evaluative adjectives on the interpretation of *essential*, and in 2.2.2 I will discuss the case of potential actions.

2.2.1 Evaluation

The earliest constructions in which *essential* is used with a meaning of dynamic necessity involve evaluative elements and appear in the early 17th century, not much later than its

first relational (but non-potential) uses (1596). Examples are given below; example (3.12) is the first attestation in the OED.

(3.12) It is an **essentiall** property of a man truly wise, not to open all the boxes of his bosome. (OED *a*1618 Ralegh, *Remains, viz. Maxims of state, Advice to his son* (1664) 89)

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

In these examples, the nouns to which a particular feature is said to be essential (*man* in (3.12), *societies* in (3.13)) are modified by evaluative adjectives. These adjectives indicate that the predication of being essential does not apply to all instances of the type designated by those nouns, but only to a **subjectively defined subset** of them. In (3.12), for instance, the property of not opening all the boxes of your bosom is said to be an essential property of *truly wise men* (only), so not of just every man. The property actually serves as a criterion for a man to be taken up in the privileged subset of truly wise men, or, in other words, if you want to be considered a truly wise man (which is a desirable thing), you should not open all the boxes of your bosom. Example (3.13) can in turn be paraphrased as 'in order for a society to be considered formed and regular, it should have government, or it should be governed'. These condition-goal paraphrases make it clear that evaluative adjectives bring with them the notion of dynamic (situational) necessity.

Because this step is so crucial in the development of *essential*, it may be useful to provide some further evidence for the effect of evaluative adjectives on the meaning of *essential*. A first test is **to add an evaluative adjective** to an expression that is obviously defining in meaning, such as (3.14) for instance.

(3.14) Heat is **essential** to fire.

(3.15) Heat is **essential** to a good fire.

As we saw in (3.6), heat is a defining feature of fire, intrinsically present in it. As soon as we add an evaluative adjective, however, as in (3.15), heat is no longer essential to all instances of fire, but only to good fires. Imagine a discussion about outdoor cooking and the qualities of a good fire to prepare pasta, for instance. In such a context, (3.15) can turn up as it specifies a necessary condition for a good fire, viz. that it should be hot. This shows how evaluative adjectives can even turn defining instances into dynamic ones.

Another piece of evidence can be found in the reversal of the test discussed above: we can also **leave out an evaluative adjective** and see how this changes the meaning of *essential*. Below I repeat example (3.13) as (3.16), and in (3.17) I delete the adjectival phrase *formed and regular*.

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

(3.17) Government is **essential** to societies.

As argued above, (3.16) involves dynamic necessity, as the predication of being essential does not apply to all the instances of society, but only to a subjectively defined subset of these, viz. those that are formed and regular. In (3.17), on the other hand, we have an ambiguous case. We can insert the phrase 'the nature of' without a semantically anomalous interpretation, which points to a defining meaning of *essential* (see section 2.2.2 for more details on this insertion test). If someone argues 'Government is essential to *the nature of* societies', then in this person's *Weltanschauung* every type of society, anarchic, democratic or dictatorial, has a form of government. Government thus is intrinsically present in and a defining feature of society. In addition to this defining interpretation, we could also argue for a dynamic-modal reading. The insertion of an action nominal can make this clearer. The expression 'Government is essential to *the maintenance of* societies', is semantically sound as well. The speaker, however, has a different *Weltanschauung*, in which not every society necessarily has a form of government, but they should have one in order to remain viable. In this interpretation, government is a necessary condition to maintain societies. Apart from acknowledging possible ambiguity and the importance of the speaker's *Weltanschauung* to resolve it, this exercise has also shown that the deletion of evaluative elements can imply a defining reading. From both the insertion and the deletion test with evaluative adjectives we can conclude that such an adjective alone can force potential meaning and change the nature of the relationship established by *essential* from one of intrinsic inclusion to one of indispensability, giving rise to the dynamic modal meaning of situational necessity.

2.2.2 Potential action

Potentiality – and dynamic necessity – does not only emerge when the element to which something is said to be essential is modified by an evaluative adjective**,** but also when it is a potential action. This was illustrated in examples (3.10) and (3.11) above, with practice being essential to reach perfection and some very intricate and refined reflections being essential to produce any passion or emotion. Clearly, the actions representing the goals are potential: they have not yet been realized, but they can be realized at some point in the future. Some other examples involving potential actions are given below. (3.18) is the earliest instance found in the OED; (3.19) dates from a later period, but it is a clearer example.

(3.18) I tell you my Tale and my *Tale-master, which is **essential** to the begetting of credit to any Relation. (OED *a*1661 Fuller, *The history of the worthies of England* xxiii. (1662) 64)

(3.19) Vegetables again in turn, and during the daytime, exhale and breathe forth that pure dephlogisticated air, so **essential** to the support of animal existence. (OED 1807 Vancouver, *General view of the agriculture of the county of Devon* (1813) 459)

In (3.19), the air exhaled by vegetables during the daytime is said to be essential to the support of animal existence. In other words, this is a dynamic-modal type of necessity, because it states a necessary condition (animal species must breathe pure air) for an

action (the support of animal existence), or rather the maintenance of a state (in order for animal species to stay alive).

In examples (3.10), (3.11), (3.18) and (3.19), the potential action can be retrieved rather easily from the text or context, though often with the help of our knowledge of the extralinguistic world. To get a better grip on the distinction between defining and dynamic examples when the potential action is not that easily retrievable, we can repeat one of the **tests** from the previous section. If one can insert the phrase 'the nature of' in front of the element to which something is said to be essential, without resulting in a semantically anomalous interpretation, *essential* will be used in its defining meaning. If, however, the insertion does not really fit the context, it should be replaced by a suitable action nominal. If the insertion of the latter is felicitous, *essential* will be used in its dynamic-modal meaning. Consider a corpus example in (3.20) and an invented one in (3.21).

(3.20) that lapsabilitie which is **essential** to humanitie. (OED 1682 More, *Annotations upon J. Glanvill's Lux orientalis* 80)
(3.21) that pure dephlogisticated air which is **essential** to humanity.

If we try to insert 'the nature of' in (3.20) ('that lapsabilitie which is essential to *the nature of* humanitie'), we have a semantically acceptable expression, implying that lapsability is defining of human beings (of course according to the *Weltanschauung* of the speaker). If we replaced 'the nature of' by 'the survival of', we would get a semantically anomalous expression, as if lapsability would be evolutionarily profitable and thus indispensable for the survival of human beings. Thus in (3.20), *essential* is used in its defining meaning. In (3.21), however, the test points to a dynamic-modal analysis of *essential*. As air is not intrinsically present in the nature of human beings, the defining interpretation of *essential* does not make sense. Rather, the intake of air is essential or indispensable to *the survival of* humanity, as we need it to maintain our cell activities (potential action, or rather potential maintenance of a state). Clearly, we use our linguistic and encyclopaedic knowledge to distinguish between defining and non-defining meaning, but the insertion test can make the 'options' more explicit in case of doubt.

2.3 To 'morally necessary': the development of deontic meaning

The discussion from the previous section shows that the extension of *essential* to evaluative contexts and contexts of potential action implies a semantic extension of the adjective. More specifically, the relationship established by *essential* has been extended from one of intrinsic inclusion to one of indispensability or dynamic-modal necessity. With the emergence of potential meaning, *essential* typically expresses situational necessity. In evaluative contexts, something or someone must first fulfil a particular condition in order to be accepted in a privileged subset defined by evaluative adjectives. In contexts of potential actions, some means or action is a necessary condition to reach a certain goal. Thus, in these two contexts *essential* expresses a necessity that is internal to the SoA

referred to. We can therefore conclude that *essential* has entered the conceptual map via the lowest space in the conceptual plane, viz. that of dynamic meaning.

To express deontic modality, however, an utterance needs 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 chapter 1, sections 1.1.2 and 2.2.3). In this sense, the final step on the pathway to deontic meaning 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". Deontic utterances appear in the first half of the nineteenth century. An example is given below.

(3.22) 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 (3.22), 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 chapter 4, section 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* has thus moved up in the conceptual plane of the map, from the lowest space of dynamic meaning to the middle space of deontic meaning.

2.4 Conclusion

By way of conclusion, I present Table 3.1 below, which summarizes the four stages of the semantic development of *essential* in terms of the properties of relationality, potentiality and desirability on SoA-external grounds. As is shown in the table, in the first stage of its development, *essential* does not have a relational meaning, as it denotes a sub-class of only one element and does not link it with another one. In the second stage, co-occurrence with relational nouns facilitates the development of relational meaning, and the emergence of defining necessity. The data showed that this first semantic property functions as the condition for complementation. In the third stage, co-occurrence with evaluative adjectives and potential actions drives the development of potential meaning, and the development from intrinsic inclusion to indispensability or dynamic necessity. It can be seen in the table that the dates of first attestation of stages 2 and 3 are only two decades apart from each other. On the one hand, this may be due to the paucity of data.

On the other, it should be noted that the earliest examples of potential meaning are evaluative contexts which are in fact still close to defining contexts because of the part-whole or inclusion relationship between X and Y (properties of men in (3.12), government of societies in (3.13)). The second way in which *essential* develops dynamic meaning involves contexts of potential action, which are both diachronically (cf. (3.18)) and semantically further 'removed' from defining contexts, because they have given up the part-whole relationship at all. To explain the development of the fourth stage with actions assessed desirable on (SoA-external) moral grounds, finally, we appealed to the process of subjectification as a mechanism of semantic change. It will be shown that the process of subjectification also plays an important role in the semantic development of the other adjectives.

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 →	*c*1440	1596	1618	1842
Meaning →	'being such by its true nature'	'constituting the true nature of'	'indispensable for'	'morally necessary'
relationality	-	+	+	+
potentiality	-	-	+	+
desirability	-	-	-	+

Table 3.1: The four stages in the semantic development of *essential* (cf. Van linden et al. 2008: 240, Table 2)

More generally, this case-study of the semantic development of *essential* has provided arguments for the diachronic validity 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, viz. non-modal evaluation. An example is given in (3.23) below. A more detailed discussion of the development of this type of meaning will follow in chapter 5, section 2.4.1. 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.

(3.23) Each time that I V F 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 I V F 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)

3 The semantic development of *vital*

A second Romance loan that entered the English language in the 14th century is *vital*. It was also borrowed with a descriptive, non-modal meaning, and developed deontic meaning only later on (OED, s.v. *vital*). In its semantic development, we can distinguish four stages as the result of three semantic changes. The first stage involves its original meaning, which is already relational. In section 3.1, I will discuss three different subsenses, which are all non-modal. The first semantic change involves the generalization of one specific subsense, viz. that in the collocation *vital parts*, and it gives rise to the meaning of *essential* used in a defining way. This generalized meaning forms the second stage of development. The second semantic change is that to dynamic meaning, in which the property of potentiality emerges. These two changes will be discussed in section 3.2. The third change involves the development of the property of moral desirability through the process of subjectification. This final change to deontic meaning will be discussed in section 3.3. As can be seen, the semantic changes will again be described in terms of the properties of relationality, potentiality and desirability. The first two properties are necessary for *vital* to enter the conceptual map via dynamic meaning, and the third enables *vital* to move up to deontic meaning. It will also become clear that parallels can be drawn between the development of *vital* and that of *essential* described above.

3.1 'Associated with life' and 'essential to life': relational meaning

The etymology of the English adjective *vital* is not very clear according to the OED. Either it is adopted from Old French *vital*,[5] or it is an adaptation of the Latin form *vitalis*, which is in

[5] 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

turn based on the noun ***vita***, 'life' (OED, s.v. *vital*). In this section, I will present three senses in which *vital* is used in the earliest attestations in the OED and the historical corpora. The data do not provide a decisive answer as to which sense is the original one, or whether these senses developed out of one another. As these questions are not immediately relevant to the development of deontic meaning, they are not discussed in further detail.

The first attestation of *vital* dates from 1386, and involves the general sense of 'associated with life'. The OED gives a more specific definition: "consisting in, constituted by, that immaterial force or principle which is present in living beings or organisms and by which they are animated and their functions maintained" (OED, s.v. *vital*). The example is given in (3.24) below. A similar example is given in (3.25).

(3.24) In hise armes twoThe**vital** strengthe islost, and al ago.
in his arms twothe vital strength islost, and all agone
'In his two arms the vital strength is lost and all gone.' (OED *c*1386 Chaucer, *Knight's Tale* 1994)

(3.25) And thus my silf, I consume al Thevertu 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 is also covered by the 'associated with life' paraphrase. In this case, however, a more specific definition can be put forward. In particular, *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, consisting of a vegetative, sensitive and rational soul (Knoeff 2004: 419), Galen distinguishes 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 called the natural, vital and animal system, the principal parts of which are the liver, heart and brain respectively (Siraisi 1990: 107–108). Galenic physiology and pneumatology persisted 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)*,[6] *blood*, *heat*, *virtue*[7]

Middle English period, it is more likely that *vital* was borrowed from Anglo-Norman than from Old French, if the source is not Latin (see Rothwell 1998).

[6] In Galen's pneumatology (from Greek πνεῦμα 'spirit'), the vital spirit(s) play(s) a special role. In particular, 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 believed 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

and *faculty*, with the specific meaning of 'associated with the heart'. In these collocations, *vital* does not assign a gradable quality, but rather functions as a classifier (see section 2.1 above), as it indicates 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.

(3.26) He ys so tymerouse; me semyth hys **vytall** spryt doth expyre.
he is so timorous; me seems his vital spirit does expire
'He is so timorous; it seems to me that his vital spirit expires.' (OED *c*1450 *Mankind* 805 in *Macro Plays* 30)

(3.27) The Spirit **Vitall** inthe Hert doth dwell, TheSpirit Naturall... inthe Liver...,
the spirit vital inthe heart does dwell, the spirit natural inthe liver,
but Spirit Animall dwelleth in the Braine.
but spirit animal dwells inthe 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)

(3.28) 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*)

(3.29) Interpr. strange Words, 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*)

(3.30) The **vital** spirit resides in the heart, is dispersed by the arteries [etc., OED] (OED 1671 Salmon, *Synopsis medicinæ, or a compendium of..physick* III. iv. 334)

It can be argued that in the more general sense of 'associated with life (or the heart)', *vital* already has a **relational meaning**. More precisely, *vital* evokes a relationship with 'life'. In this sense, it can be paraphrased as 'essential to life', with *essential* used in a defining way. *Vital strength*, for instance, is a strength that is intrinsically present in life, or more specifically in living creatures and organisms. Likewise, the *vital spirit* is intrinsically present in life. At least in that particular *Weltanschauung*, it constitutes 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 imply a relationship of intrinsic inclusion.

The third non-modal sense of *vital* is found in collocations with the relational noun *part(s)*. The first example in the OED dates from 1565 and is given in (3.31) below. Arguably, this collocation was used in a Galenic and a more general sense. In the Galenic sense, the term *vital parts* referred to the organs of the Galenic vital system, viz. the organs in the thoracic cavity and the arteries (Siraisi 1990: 107). This sense is illustrated in example (3.32) below, 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,

discussed in Galen's writings, but appears in late medieval literature, for instance in the works of the Arabic authors Avicenna and Johannitius (Temkin 1962: 104–105; Siraisi 1990: 107–108).

[7] It can be argued that in example (3.25), *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.

indicating a type of parts. In the more general sense, the referents of the collocation do not belong to the vital system only, but also 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*. In particular, vital parts are organs without which we cannot live, such as the heart, lungs, brains and liver, whereas non-vital parts are those which can be missed, such as the milt, uterus, breasts and eyes. This general sense is illustrated in example (3.33), and is clearly of a later date than the Galenic example. 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, to put it differently, without these parts, there is no life.

(3.31) The **vitalle** partes. (OED 1565 Cooper, *Thesaurus linguæ Romanæ et Britannicæ* s.v. *vitalis*)

(3.32) 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)

(3.33) 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*)

The three senses of *vital* discussed so far are relational, as they all call forth a relationship of intrinsic inclusion with 'life'. However, it should be noted that the examples above do not show structural reflections of *vital*'s relational meaning. Unlike *essential* with relational meaning (in expressions of defining necessity, cf. section 2.1, (3.4)–(3.7)), *vital* is not associated with prepositional complements (*to*- or *of*-PPs). In the next section, I will show that complements appear after the first semantic change of *vital*, viz. semantic generalization. In fact, it is only after *vital* loses its connection with 'life' that it can express defining necessity and take complements just like *essential* does in its second stage of development.

3.2 From 'essential to life' to 'indispensable for': the development of dynamic meaning

In this section, I will describe how *vital* enters the conceptual map via situational dynamic meaning. As discussed above, *vital* in collocation with *parts* (or later, also *organs* (OED 1870)) can be paraphrased as 'essential to life', with *essential* used in a defining way. In what follows, I will argue that *vital* first loses its association with 'life' through semantic generalization, retaining only the sense of *essential* used in a defining way. From this relational, non-potential meaning, I posit a semantic extension to the potential meaning of 'indispensable for', which expresses situational dynamic meaning. Like in the case of *essential*, this property of potentiality emerges through patterns of co-occurrence with evaluative adjectives and potential actions.

The **semantic generalization** of *vital* starts from its collocation with *part*s, and extends the relationship of intrinsic inclusion within 'life' to that of intrinsic inclusion within basically anything that is more or less composite 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 necessarily consistent with the chronology of the attestations.

The hypothesis that the semantic generalization occurred prior to rather than simultaneous with the development of potential meaning is suggested by examples in which *vital* is found with nouns referring to abstract concepts, which are similar to those found with *essential* in its relational but non-potential meaning. Two instances are given below. Note that these examples show structural reflections of the relational meaning of *vital*: the elements to which something is said to be vital are coded by *of*-PPs (the same goes for (3.36) below).

(3.34) 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)

(3.35) 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. Rather, *vital* is used in its generalized sense, as it refers to essential parts of a religion or theory. These nouns in the *of*-PPs refer to rather abstract things, which are fairly homogeneous in substance, much like the relational non-potential examples found with *essential*, viz. (3.5) to (3.7) above (see section 2.1). It can be argued that *vital* is used here in a defining way, as the religion in (3.34) and the theory in (3.35) would not be the same anymore if the *vital part*s were changed or taken away. In other words, these parts are intrinsically present in the religion or theory, and constitute their essence.

Like in the case of *essential*, the property of **potentiality** – and hence, dynamic meaning – first emerges in examples in which the noun to which something is said to be vital is modified by an **evaluative adjective**.[8] As discussed in section 2.2.1 above, such

[8] However, it might be argued that the collocation from which the process of generalization starts (viz. *vital part*s) provides 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 thought of as an invited inference, which is later semanticized (Traugott and Dasher 2002: 34–40). Paraphrases involving potentiality can also be used for examples which are comparable to those in (3.34) and (3.35) above, but which involve more concrete noun referents that are heterogeneous in substance. Examples are given below.

(ii) To preserve intact such **vital** parts as the machinery, magazines, and steering gear. (OED 1889)

(iii) Spring washers are less effective, but answer well enough for the less **vital** parts of the mechanism. (OED 1912)

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

adjectives indicate that the predication does not apply to all instances of the type designated by that noun, but only to a subjectively defined subset of these. An example is given below.

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

This example is similar to those with *essential* and an evaluative adjective, for instance in (3.12) and (3.13) above (see section 2.2.1). In (3.36), the three circumstances listed are essential or necessary only to a potential or subjectively defined subset of actions, viz. well-ordered actions. In other words, in order for an action to be considered well-ordered, it should be characterized by the circumstances of person, time and place. This condition-goal paraphrase suggests that the evaluative adjective *well-ordered* imposes a potential interpretation on *vital*. It should also be noted that here the relationship established by *vital* is not one of intrinsic inclusion, but rather one of indispensability.

Later, the property of potentiality is also found in examples in which some element is said to be vital to a particular **potential action**. The following examples bear a close resemblance to (3.18) and (3.19) above (see section 2.2.2), in which *essential* is used with a potential action.

(3.37) 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)

(3.38) The uninterrupted working of the long and varied chain was **vital** to the welfare of the army and the success of the war. It could only be maintained if every section was adequately supplied and none were either choked or starved. (CLMETEV 1899 Churchill, *The river war, an account of the reconquest of the Sudan*)

(3.39) A large amount of money is held there by bankers and by bill-brokers at interest: this they must employ, or they will be ruined. It is better for them to reduce the rate they charge, and compensate themselves by reducing the rate they pay, rather than to keep up the rate of charge, if by so doing they cannot employ all their money. It is **vital** to them to employ all the money on which they pay interest. (CLMETEV 1873 Bagehot, *Lombard Street*)

In example (3.37), 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 character of the necessity make it clear that the type of meaning involved is situational dynamic modality. The same goes for (3.38), in which the continuous chain work was necessary to financially support the army, and ultimately to win the war. In (3.39), finally, bankers have to employ all the money on which they pay interest in order to avoid being ruined. In this case, the goal to which the action of employing is said to be vital or

potential actions), and the prior occurrence of defining examples such as (3.34) and (3.35) 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 discussed here to emerge.

necessary is not stated explicitly, but it can be inferred from the context. Clearly, in these examples with potential actions (coded by *to*-PP complements in (3.37) and (3.38)), the relation that vital establishes is one of indispensability. We can thus conclude that the meaning of *vital* has been extended from defining to dynamic necessity, and that the adjective has entered the conceptual map in the course of the 17th century. Deontic expressions with *vital* appear roughly three centuries later, and will be discussed in the following section.

3.3 To 'morally necessary': the development of deontic meaning

In this section, I will argue that *vital* moves up in the conceptual map from dynamic to deontic meaning through subjectification. Whereas the dynamic expressions discussed above involve SoA-internal necessity, deontic modality involves an attitudinal source who assesses the degree of desirability or necessity of a particular SoA. Crucially, such a deontic assessment is grounded on moral, SoA-external arguments (see chapter 1, sections 1.1.2 and 2.2.3). Like in the case of *essential*, therefore, the semantic extension from dynamic to deontic meaning is aptly conceived of as **subjectification** (Traugott 1989: 35) (cf. section 2.3). The earliest attestation of deontic *vital* in a construction with a clausal complement dates from 1920, and is given in (3.40). Another example is given in (3.41).

(3.40) 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)

(3.41) It is **vital** that the European Community helps the process of transition to market economies, preparing these countries for eventual EC membership. (CB, ukephem)

In (3.40), the speaker expresses his/her idea of what (s)he thinks is desirable or vital for a leader to know. In (3.41) the speaker thinks it is vital that the EC helps former communist countries in Central and Eastern Europe to adopt a market economy. 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.

3.4 Conclusion

I conclude this section with Table 3.2, which details the four stages in the development of *vital*, again in terms of the properties of relationality, potentiality and desirability. As indicated above, the chronology of the first attestations does not entirely match the semantic development proposed here (especially stages 2 and 3). As indicated in Table 3.2, in the first stage the meaning of *vital* is already relational. In fact, the three subsenses found in the earliest attestions all involve a relationship of intrinsic inclusion with 'life', which can be explained by the etymology of *vital* (ultimately based on Latin *vita*, 'life'). This type of relationship is preserved in its semantic generalization to the meaning of *essential* used in a defining way (i.e. stage 2). The connection with 'life', however, is lost. The

development of dynamic meaning leading to the third stage is driven by patterns of co-occurrence with evaluative adjectives and potential actions. This meaning crucially involves the property of potentiality and a relationship of indispensability instead of intrinsic inclusion. Like in the case of *essential*, evaluative contexts appear earlier than those with potential actions. Again, the data show 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 involved in this final semantic change.

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	-	-	-	+

Table 3.2: The four stages in the semantic development of *vital*

3.5 Essential *and* vital*: a first pathway to deontic meaning*

The case-studies of the semantic development of *essential* and *vital* have adduced further arguments for the diachronic validity of the conceptual map. In both cases, the semantic properties of relationality and potentiality were necessary to express situational dynamic meaning. Hence, these properties were identified as the map's conditions of entry from below. In a later stage, deontic meaning develops from this dynamic meaning. Through this final semantic change, both adjectives become modally polysemous and move up to the space of deontic meaning in the conceptual map.

From the discussion of the two case-studies, it can be inferred that the similarities in the development of both adjectives outnumber the differences. The main difference between the two concerns the first stage. 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 between 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. Finally, both adjectives undergo subjectification to arrive at 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, viz. *essential*, and that the other adjective, viz. *vital*, follows suit. This hypothesis hinges on the following three findings. First, 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 pathway, as it starts from non-relational meaning and develops the three properties consecutively. *Vital*, in turn, 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 thus hypothesize that *essential* might have been the **model adjective** for the first pathway of change, with *vital* following suit. This pathway is represented in Figure 3.1 below. In the following sections, I will present a second pathway, for which the adjectives *crucial* and *critical* are exemplary.

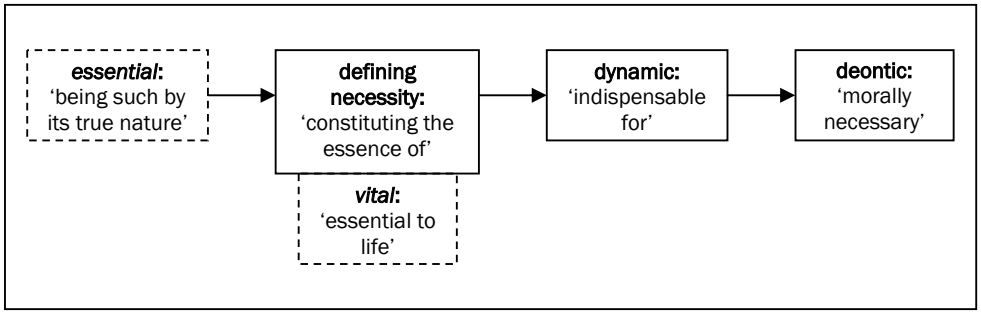

Figure 3.1: The first pathway to deontic meaning: *essential* and *vital*

4 The semantic development of *crucial*[9]

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

[9] This section is based on Van linden et al. (2008: 240–244).

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 this section, I will show that five stages can be distinguished in its semantic development, which are, however, not as clear-cut as is the case for the previous two adjectives. Three semantic changes will be discussed in their chronological order; a first change driven by metaphorical extension (discussed in section 4.1), a second change driven by semantic generalization (discussed in section 4.2), and a third change driven by subjectification (discussed in section 4.3). Again, the development of deontic meaning will be described in terms of the semantic features of relationality, potentiality and desirability.

4.1 From 'cross-shaped' to 'necessary to decide between two hypotheses': the development of relational and potential meaning

Like *essential* and *vital*, *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.

(3.42) **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*)

(3.43) The bursal and **crucial** ligaments were in their natural order. (OED 1751 *Phil. Trans.* XLVII. xxxvii. 261)

In both (3.42) and (3.43), *crucial* functions as a classifier. In (3.42), it indicates a specific type of incision in the form of a cross, as opposed to a linear incision. In this sense, *crucial* designates a subtype of the general type of incision, rather than assigning a gradable quality. In (3.43), *crucial* denotes a sub-class of *ligaments*: specifically, these are the two ligaments 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 this case too, *crucial* indicates a subtype of the general type of the head noun, and does not attribute a quality to the NP referent. More generally, the OED database does not contain any predicative or graded uses of *crucial* in its original meaning. It is clear that *crucial* in the sense of 'cross-shaped' or 'cross-like' is non-relational, since it does not link two concepts, that it is non-potential, since it does not involve a potential event or the potential presence of an entity, and that it does not involve a notion of desirability (but merely an indication of the shape of an entity).

The fccirst semantic change of *crucial* on its way to deontic meaning involves **metaphorical projection**. It is commonly accepted that the basis of this metaphorical extension was 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 very influential *Novum*

Organum (1620), written in Latin, Bacon coins the phrase *instantia crucis* 'crucial instance', which he explains as a metaphor derived from crosses that are placed at bifurcations of the road and indicate 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 decide which way to go[10] (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 question 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 maps 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 performed to decide between two rival hypotheses (OED, s.v. *crucial*). Although the studies of the scientists mentioned were written in the 17th or early 18th century (some in Latin), the specific phrases with the adjective *crucial* appear in English only in the 19th century. [11] The earliest example is given in (3.44) below.

(3.44) 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 (3.44)) and *crucial experiment* (described above) make it clear 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 decide between rival hypotheses, and ultimately to resolve the intellectual crisis. (Note that *crucial* functions as a classifier of its collocates.) These condition-goal paraphrases imply that the collocations involve dynamic situational necessity, just like *essential* and *vital* in their third stage of semantic development.

[10] 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; italics his).

[11] 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)).

4.2 From 'necessary to decide between two hypotheses' to 'decisive for': the development of dynamic meaning

A second semantic change allows *crucial* to meet the entry conditions for the conceptual map. In particular, the change 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'. Whereas *crucial* only has this specific meaning in the collocations with *instance* and *experiment*, in which it functions as a classifier, it retains a more general 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 the adjective and the noun. This is structurally reflected by the occurrence of complements (see (3.45)–(3.47)). Syntactically, it no longer functions as a classifier, but as an attribute: it is gradable, and it can be used in predicative position (see (3.46)–(3.47)). Example (3.45) illustrates the **semantic generalization** of *crucial*. Even if it modifies the noun *experiments*, we can still argue for a general attribute reading, since the potential action to which the experiment is considered crucial needs to be expressed; if *crucial experiments* had been used in its specific collocational sense, the *for*-complement would have been redundant. The type of relationship established by *crucial* is one of decisive importance or determining influence.

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

As in the case of *essential* and *vital*, potential contexts such as in (3.45) are a prerequisite for dynamic and later on deontic modal meaning. In the following dynamic examples, some actions are considered crucial to other potential actions.

(3.46) These results show that fertilizer is **crucial** for satisfactory growth, particularly slow acting types such as John Innes base. (OED 1970 *Nature* 25 July 377/1)

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

In (3.46), the use of fertilizer is shown to be decisive for satisfactory growth. Clearly, the semantic properties of relationality and potentiality are present; the use of fertilizer is a necessary condition to attain the goal of satisfactory growth. The same goes for (3.47), where the blocking device has to be deposited at a certain point in order to ensure that the fallopian tubes are rendered impassable. The action of depositing is necessary on SoA-internal grounds, that is, for the proper blocking of the tubes (in a sterilization operation) (see chapter 1, section 1.2.1, (1.19)). Examples (3.45) to (3.47) make it clear that *crucial* in its generalized meaning of 'decisive for' can be used in dynamic utterances expressing a situation-internal necessity. It can therefore be concluded that after metaphorical

projection and semantic generalization *crucial* has entered the conceptual map, as it has met the entry conditions of relationality and potentiality.

4.3 To 'morally necessary': the development of deontic meaning

Whereas in the examples above 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 *crucial* has moved up in the conceptual map to reach the space of deontic meaning.

(3.48) With the scourge of illegal narcotics infecting every part of the world, it is **crucial** to educate young people about the dangers of drugs. (CB, sunnow)

(3.49) 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 detail of the curriculum, on the best way to combine education rigour with the necessary freedom for spiritual enquiry. (CB, ukmags)

In (3.48), the speaker (attitudinal source) argues that it is desirable or morally necessary to educate young people about the dangers of drugs. In (3.49), 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 invoke **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.

4.4 Conclusion

The five stages that can be distinguished in the semantic development of the French loan *crucial* are summarized in Table 3.3 below, again in terms of the properties of relationality, potentiality and desirability. First, it should be noted that the distinction between the second and third stage is not hard and fast. In fact, these two stages coincide temporally, since the metaphorical projection is brought about by Bacon's coining of the collocation *crucial instance*. The two stages have been distinguished on the basis of the principle of image-schema preservation, which ensures that the source and target meaning of a metaphor have the same image-schematic structure (stage 1 and stage 2 have the same configuration of semantic properties). Arguably, only in the specific collocations with *instance* and *experiment* can *crucial* be characterized by relational and potential meaning (see stage 3). In a process of semantic generalization, *crucial* loses the specific collocational meaning, and comes to mean 'decisive for'. In this meaning, it can be used in dynamic utterances expressing necessity inherent in a situation, 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.

Stages →	stage 1: **original meaning**	stage 2: **metaphorized meaning**	stage 3: **collocational 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 necessary'
relationality	-	-	+	+	+
potentiality	-	-	+	+	+
desirability	-	-	-	-	+

Table 3.3: The five stages in the semantic development of *crucial* (cf. Van linden et al. 2008: 244, Table 3)

Like the previous case-studies, the study of the semantic development of *crucial* forms another piece of evidence for the diachronic validity 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* moves 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 tenseless or potential SoA, but rather of a proposition (involving a tensed SoA). In such expressions, *crucial* seems to convey non-modal evaluative meaning, located in the highest conceptual space in the map. An example is given in (3.50) below.

(3.50) 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)

As in the case of *essential*, I refer to chapter 5, section 2.4.1 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.

5 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 section, I will show that three stages can be distinguished in its development from non-modal to deontic meaning. These three stages are the result of two distinct semantic changes, which will be dealt with below in chronological order. The first change involves semantic generalization and leads from its original meaning to dynamic meaning (discussed in section 5.1). The second change is that from dynamic to deontic meaning, again through subjectification (discussed in section 5.2). 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.

5.1 From 'relating to a crisis' to 'decisive for': the development of dynamic meaning

The first attestation of *critical* in English dates from 1590, and is a derivation of the now obsolete adjective *critic* (OED, s.v. *critical*). The first attestation of this last form dates from 1544. According to the OED, the 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 is related to the act of judging, and can be paraphrased by 'given to judging', especially 'given to adverse or unfavourable criticism' (OED, s.v. *critical*). The first attestation in the OED of *critical* in this sense comes from Shakespeare's *Midsummer Night's Dream*, and is given in (3.51). In its second sense, *critical* is a medical term and relates to the crisis or turning point of a disease (OED, s.v. *critical*; Barnhart 1988: 236a). An example of this medical sense is given in (3.52). This sense is also the meaning of *critic* in its first attestation, which is given in (3.53).

(3.51) That is some Satire keene and **criticall**. (OED 1590 Shakespeare, *A midsommer nights dreame* V. i. 54)

(3.52) 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)

(3.53) 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* (*J.*) *Regiment of life* (1553) Gjb)

As the sense of *critical* in (3.51) does not play a role in its semantic development of deontic meaning, I will not discuss it in more detail. The **medical sense** of *critical* (and *critic*), illustrated in (3.52) (and (3.53)), however, did play an important role in the development of deontic meaning, and it is taken here as the first stage.[12] This sense originates in the writings 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 involves the sudden excretion 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. (3.52)–(3.53)),[13] with which he referred to days on which the illness reaches 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 creticis*,[14] Galen provides the Hippocratic doctrine of critical days with a theoretical – astrological – foundation. In particular, Galen argues 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, viz. 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 involves an **astrological component**. Moreover, several studies have shown 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). Hence, it is not suprising that the first attestations of *critic*(*al*) in its medical (and astrological) sense typically collocate with *days*, as in (3.52) and (3.53) above. Some other examples are given below.

(3.54) The Moone passeth almost euery seuenth day into the contrary signe of the same quality and bringeth the **criticall** daies. (OED 1602 Vaughan, *Nat. Direct.* 47)

(3.55) Another time is called Intercidental, which is a time falls out between the Judicial dauyes and **Critical**. (OED 1651 Culpepper, *Semeiotica Uranica; or, an astrologicall judgment of diseases* 22)

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[12] 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 in turn 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).

[13] 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).

[14] Galen's work *De diebus creticis* ('On critical days') is also referred to as *De diebus decretoriis* (e.g. Cooper 1999).

(3.56) The medicall month; introduced by Galen … for the better compute of Decretory or **Criticall** dayes. (OED 1646 Browne, *Pseudodoxia epidemica or enquiries into very many received tenents* IV. xii. 213)

(3.57) If the Moon upon a **Critical** day be well aspected of good Planets, it goes well with the Sick. (OED 1671 Salmon, *Synopsis medicinæ, or a compendium of..physick* II. xv. 183)

In collocation with *day*(s), *critical* functions as a classifier, indicating a specific subtype of day, rather than attributing a gradable quality to its referent. Another adjective referring to the same subtype is *decretory*, as in (3.56) (cf. note 14). The types of days *critical* or *decretory* ones are opposed to are *intercidental* and *judicial* days, as in (3.55). As explained in (3.55), 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 *indicatory* days, as in (3.52), and are the days on which the physician has to pay special attention to the symptoms[15] in order to be able to decide the direction of the upcoming crisis (viz. days 4, 11 and 17 of the medicinal month, cf. Cooper 1999: 8). In some accounts, however, *judicial*, is used as a synonym of *critical* and *decretory*, as in (3.53) (see also OED, s.v. *judicial*).

The explanation of *critical days* above has shown that this fixed phrase has **relational and potential meaning** as a whole, just like the phrases *crucial instance* and *crucial experiment* in section 4.1 above. 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 thus implies that the collocation studied here involves 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 show that the use of *critical* is extended from the technical medico-astrological sense relating to the crisis in a disease to the more general meaning of 'decisive for' or 'important for' when used in modifying other nouns, just like *crucial* after its semantic generalization. In this extended sense, it is *critical* itself that has relational and potential meaning, and not *critical* in combination with the noun it modifies. What is regarded as *critical* has a decisive impact on the following course of events or, in other words, will determine the outcome of the matter talked about. The relationship established by *critical* is thus one of decisive influence or determining importance. The semantic generalization of *critical* has structural correlations in that it is able to take complements (see (3.59)–(3.61) below) – unlike in its collocational sense, as has been observed for *crucial* (cf. section 4.2). Syntactically it does not function as a classifier anymore, but rather as a attribute, since it can be graded, as is illustrated in (3.58), and used in predicative position, as is illustrated in (3.59) to (3.61).

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

[15] These symptoms included the rythm and strength of the pulse, and the composition of bodily secretions (Cooper 1999: 7).

(3.59) 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)

(3.60) 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. But the vast potential for a hydro-electric power in their Himalyan ranges is something their neighbour is now casting envious eyes on. (CB, bbc)

(3.61) 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 (3.58), *critical* is modifying *this change* (presumably the change between two seasons) and it is graded. The adjective has the meaning of 'decisive for', but arguably the sense of necessity is not that clearly present. In fact, all Early and Late Modern English examples are similar to (3.58), with *critical* modifying a special occasion or a particular period of time. 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 (3.59) to (3.61). In (3.59), the use of short scenes is critical or necessary to provide continuity and maintain suspense in the play. This condition-goal paraphrase, typical of dynamic meaning, also applies to (3.60). Here, the support of India has been critical or necessary for the poor nations of Nepal and Bhutan to survive. In (3.61), finally, getting the set-up of a Formula One car right is critical or necessary to take a good start in a race (and ultimately, to win the race). Note that in this example, the condition is encoded by a clausal complement. In all these cases, some action is regarded as critical or necessary to the achievement of a particular goal, on the basis of SoA-internal grounds. These examples express situational dynamic meaning, and hence show that *critical* has entered the conceptual map from below, much like *essential*, *vital* and *crucial*.

5.2 To 'morally necessary': the development of deontic meaning

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. As explained above, deontic utterances involve an attitudinal source who expresses his/her moral commitment to a potential SoA. The change from dynamic to deontic meaning takes place only in Present-day English. Examples are given below.

(3.62) "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)

(3.63) 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 example (3.62), the speaker thinks it is critical or morally necessary to mount resistance against racism and totalitarianism in youngsters rather early. In example (3.63), 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**.

5.3 Conclusion

To conclude, I summarize the three stages in the semantic development of *critical* in the following table. The sense of *critical* related to criticism has not been included, as it is not relevant to the development of deontic meaning.

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 →	*critic*: 1544 *critical*: 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	-	-	+

Table 3.4: The three stages in the semantic development of *critical*

In its original meaning that eventually leads to deontic meaning, *critical* typically collocates with *days*. In the discussion above, I have shown that in this particular collocation, *critical* already has relational and potential meaning, as it can be paraphrased by 'necessary to decide on the direction of the disease'. In a process of semantic generalization, *critical* loses the connection with disease and its use is extended from a specific medico-astrological context to a more general context in which something has a decisive influence on something else. After this generalization, the meaning of *critical* is very similar to that of *crucial* in its fourth stage. It should be noted, though, that the sense of necessity is not always foregrounded. In fact, it is only in PDE that *critical* is used in clearly dynamic expressions, in which the necessity of SoAs is indicated on the basis of SoA-internal arguments. 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 diachronic validity. More precisely, *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, viz. deontic meaning, and hence becomes modally polysemous. In the conceptual map, it has moved upwards from the lowest to the middle conceptual space. Unlike *essential* and *crucial*, *critical* does not occur in constructions with propositional complements. The data thus show that its use is restricted to the two modal categories in the conceptual map, viz. dynamic and deontic meaning.

5.4 Crucial *and* critical*: a second pathway to deontic meaning*

From the case-studies on *crucial* and *critical* we can understand that their semantic developments to deontic meaning run parallel. The only difference between the two cases relates to the changes leading to the stage of collocational meaning. In particular, with its original meaning being 'cross-shaped', *crucial* underwent metaphorical projection when it came to be used in collocation with *instance* or *experiment*, and hence associated with the semantic properties of relationality and potentiality. In the case of *critical*, however, the stage of collocational meaning (*critical days*) coincides with its original meaning. In other words, *critical* does not undergo metaphorical projection before it is used in a fixed collocational phrase in which it has relational and potential meaning. Importantly, in both cases the collocational stage involves the notion of a **crisis** or turning point. In the case of *crucial*, the crisis relates to the development of a scientific theory, while in the case of *critical*, the crisis relates to the development of a disease. From the stage of collocational meaning onwards, the semantic developments of *crucial* and *critical* are very similar. 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 is also reflected structurally in that the adjectives can take complements (unlike in their collocational stages) (cf. *vital* in its generalized meaning, see section 3.2). Syntactically, the adjectives no longer function as classifiers, but as gradable attributes, which allow for predicative alternation. In this stage, *crucial* and *critical* can be used in dynamic expressions 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.

Like in the case of the first pathway, it could be argued that one adjective, viz. *crucial*, may have been exemplary for the other, viz. *critical*. Again, 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 or 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, viz. *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 the three findings presented here, we might assume that the second pathway to deontic meaning has *crucial* as its **model**, and that *critical* has developed analogously. This pathway of *crucial* and *critical* is represented in Figure 3.2 below.

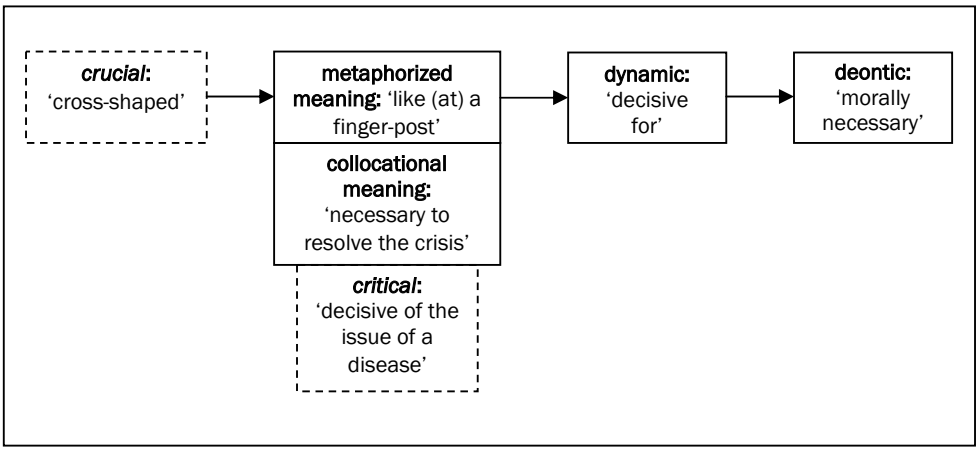

Figure 3.2: The second pathway to deontic meaning: *crucial* and *critical*

6 Adjectival pathways to deontic meaning[16]

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. Importantly, however, the type of dynamic meaning involved differs. Whereas 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),[17] the adjectives studied here develop only one type of dynamic meaning which leads to deontic meaning, viz. **situational meaning**. In both cases, the process of subjectification[18] re-orients the property of necessity from the situation (necessity imposed by or internal to a particular situation) to the attitudinal source (necessity as judged 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 chapter 6, section 3.2.

What is even more interesting than the dynamic-deontic development, is the stages leading up to this final phase. With adjectives, the development of situational dynamic meaning is a matter 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 condition and goal. Accordingly, it was shown 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

[16] This section is based on Van linden et al. (2008: 244–245).
[17] 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).
[18] In terms of the typology of subjectivity devised by De Smet and Verstraete (2006), the adjectives develop a type of subjective meaning that involves the enactment of the (reported) speaker's position (see also chapter 1, section 1.3.4). This type of subjectivity bears affinity with the concept of intersubjectivity as defined by Traugott and Dasher (2002: 21–23) (De Smet and Verstraete 2006: 387).

map, or, more specifically, 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 substantial 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. In particular, *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 shown 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. Clearly, the case-studies have indicated the importance of constructions in the development of a particular lexical item. Most importantly, 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 invoked for a diverse set of semantic changes in different domains.

Still with regard to the properties of relationality and potentiality, the case-studies show that they function on different levels: the development of relationality seems to be mainly a lexical matter, while the development of potentiality seems to be on a constructional rather than a lexical level. In the cases of *essential* and *crucial*, for instance, 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, involve smaller semantic developments (from one type of necessity to another).

In general, the semantic developments of the strong adjectives studied here illustrate the **diachronic validity** of the **conceptual map** proposed in chapter 1, section 2.3.1. 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, viz. *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 chapter 1, section 2.3.1 on the division of labour among the various types of expressive devices).

Moreover, the case-studies have presented **two distinct pathways** to the space of deontic meaning in the conceptual map. 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*. The two pathways of change found with the adjectives studied in detail and their movement in the conceptual map are represented in Figure 3.3 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 useful in further explorations 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'[19] to 'morally desirable'). Hopefully, further research can expand this preliminary typology of adjectival paths to deontic meaning.

So far, the discussion has focused on 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. As explained in chapter 1, sections 1.1.1 and 1.2.1, dynamic modality is a binary category consisting of two values, viz. possibility and necessity. In the case of the strong adjectives studied here, the dynamic meaning of situational necessity subjectifies into deontic meaning. However, deontic meaning can also be expressed by a set of **weak adjectives**, some of which 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 chapter 1, 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 meaning. This difference in diachronic development provides a further lexico-semantic argument for the validity of the conceptual map.

So far, the discussion has focused on 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. As explained in chapter 1, sections 1.1.1 and 1.2.1, dynamic modality is a binary category consisting of two values, viz. possibility and necessity. In the case of the strong adjectives studied here, the dynamic meaning of situational necessity subjectifies into deontic meaning. However, deontic meaning can also be expressed by a set of **weak adjectives**, some of which 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

[19] OED, s.v. *needful*.

chapter 1, 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 meaning. This difference in diachronic development provides a further lexico-semantic argument for the validity of the conceptual map.

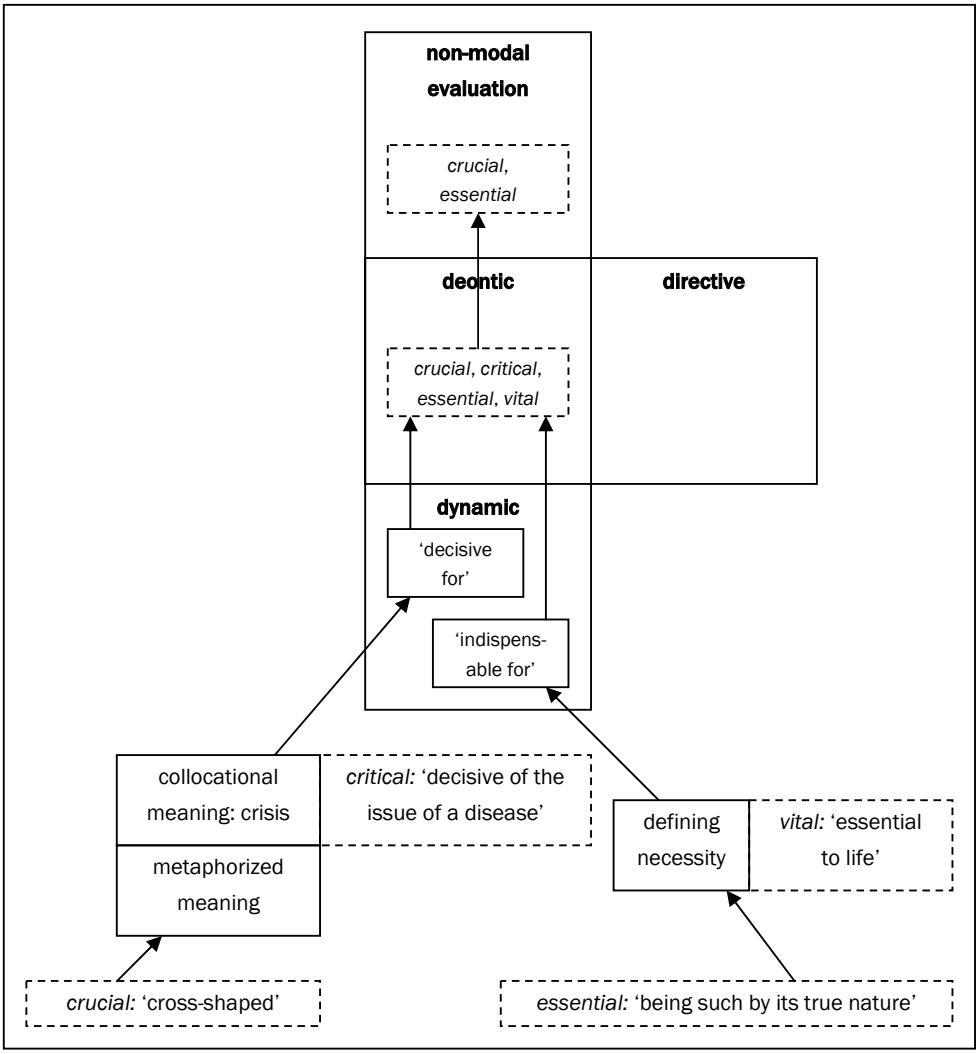

Figure 3.3: The pathways of change in the conceptual map: *crucial*, *critical*, *essential* and *vital*

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. As mentioned above, the modal auxiliaries are never used to express non-modal attitudinal meaning, whereas weak adjectives frequently are. It may be interesting, though, to look briefly at their **lexical sources**. In fact, some weak adjectives can be related to cross-linguistically recurrent lexical sources of (types of) obligation. The adjectives *proper* and *appropriate*, for instance, etymologically involve 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 et al. 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 et al. 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 et al. 1994: 183). The adjective *fitting* (and possibly also *fit*), in turn, relate(s) to the notion of measure (cf. OED, s.v. *fitting* and *fit*), much like the expression for obligation in Danish (*må*) (Bybee et al. 1994: 182). The etymology of the English adjective *meet* and the modal *must* (**motan*) also relates to measure (OED, s.v. *meet*; Traugott and Dasher 2002: 122). Furthermore, the semantics of the Dutch past participle *gepast*[20] and its German counterpart *angemessen* (both '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. If not in their lexical sources, weak adjectives differ from strong ones in that they can be used to express deontic and non-modal evaluative meaning. As discussed in chapter 1, sections 2.2.2 and 2.2.3, weak adjectives can combine with two semantic types of complement, viz. mandative and propositional ones. In fact, the development of deontic meaning with weak adjectives seems to be mainly triggered by clausal complementation – of the mandative type. Therefore, I will focus on the diachrony of the clausal complement patterns with a set of weak adjectives in chapter 5, section 2. It will be shown that they appear earlier in deontic expressions with mandative complements than in non-modal evaluative expressions with propositional complements.

[20] In Dutch, the present participle of the same verb *passen* ('fit'), viz. *passend*, can also be used to translate *fitting*.

Chapter 4
The diachrony of the clausal complement patterns

Like chapter 3, this chapter is concerned with the diachronic validity of the conceptual map presented in chapter 1. Whereas the previous chapter is semantically oriented, as it concentrates on the semantic development of the adjectival matrix, this chapter is more syntactically oriented: it discusses the diachrony of the clausal complement patterns found with the adjectives studied here. However, as with the modal-evaluative domain, the literature in this domain has concentrated mainly on the verbal category. This focus on verbal complementation 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; Verspoor 1990; Achard 1998; 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 1928b; Allen 1980; Van der Wurff 1990; Fischer 1991; Fischer et al. 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 et al. 1999: 672–674, 716–722; Hunston and Francis 1999: 59; Huddleston and Pullum 2002: 1256–1259; Herbst et al. 2004: 278, 408, 540, 926), or comprehensive historical grammars (e.g., Visser 1969–1973; the CHEL-volumes). Faced with either general or partial descriptions, this chapter aims at a systematic diachronic account of clausal complement patterns with the set of adjectives studied here.

The diachronic account presented in this chapter comprises two parts. On the one hand, 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 (section 1). In particular, it will focus on the development of the copular extraposition construction from its forerunner, the so-called subjectless construction (section 1.1), and on constructions with active and passive transitive matrices (section 1.2). In addition, it will also discuss the distribution of these three types of matrix constructions across the categories of the conceptual map.

On the other hand, this chapter will discuss the two formal types of clausal complement that are attested with the adjectives studied here in the various historical stages of English (section 2), viz. *that*-clauses (section 2.1) and *to*-clauses (section 2.2). The descriptions illustrate the diachronic validity of the conceptual map, as they show that its lexico-semantic and conceptual distinctions apply across time. More specifically, the diachronic data bear out that strong adjectives are found with mandative complements only, whereas weak adjectives pattern with both mandative and propositional complements. Finally, I will present the diachronic distribution of the two formal types of

complement, and I will compare these with the findings on verbal complementation (section 2.3). In fact, I will show that the mandative complement constructions adduce evidence for the rise of the *to*-infinitive at the expense of the subjunctive *that*-clause in Middle English, which has been 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.

In addition to the evidence it presents for the conceptual map, this chapter also serves as a descriptive introduction to chapters 5 and 6, in that it discusses the origin and development of the various constructions found in Present-day English (section 2). With its diachronic perspective, it is most closely related to chapter 5, which itself offers cross-constructional and developmental arguments in support of the diachronic validity of the conceptual map. Together, chapters 4 and 5 pave the way for the final chapter, chapter 6, which takes a synchronic perspective and investigates the complex constructions of matrix and complement in more detail. In this sense, it will adduce evidence for the synchronic validity of the map.

The following sections are based on an extensive diachronic corpus study. The historical data were presented in Table 2.1 in chapter 2, section 2.1. The corpora used were listed in Table 2.3 in chapter 2, section 2.2. As the data are not distributed evenly throughout the various periods and as the corpora used differ in size, I will provide normalized frequencies per 100,000 words where necessary.

1 The relation between matrix and complement

This section traces the origin and describes the development of the extraposition constructions with adjectival matrices, the most frequent construction in Present-day English. 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 (4.1) to (4.3). It should be noted that the term '**extraposition**' has received different meanings in the literature.[60] In this study, I adhere to the traditional approach set out by Jespersen (1933) (see also e.g. Quirk et al. 1985: 1391), and I reserve the term 'extraposition construction' for constructions such as the examples below, in which a predicative relation between *it* and adjective is complemented by a

[60] One of the oldest uses of the term 'extraposition' is found in the work by Jespersen, 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" (1933: 95). Nominal clauses, such as *to be realistic about your prospects* in (4.1) or *that the Pope make it a public invitation* in (4.2), can also occur in extraposition, represented by "preparatory" *it* in the main clause (1933: 154–155). Later on, in the generative framework, 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). As will be suggested in section 1.1, note 6, however, this transformation has no diachronic validity.

clause. Although the term suggests that a particular movement has taken place (cf. note 1), I use it merely as a label for a particular structural configuration in which the clausal complement occurs post-verbally (cf. Kaltenböck 2000, 2003).

(4.1) 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)

(4.2) 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)

(4.3) 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. They were now older, better educated, and of a higher income level than when they had first joined 10 or 15 years before. (CB, ukbooks)

In what follows, section 1.1 will discuss the rise of the copular extraposition construction, which is illustrated in (4.1). In fact, this construction with anticipatory subject *it* was not the rule in earlier stages of English, but developed from a subjectless construction with an impersonal verb phrase in the course of the Middle English period. In section 1.2, I will discuss constructions such as (4.2) and (4.3), which involve transitive matrix verbs (*think* and *consider* respectively) rather than copular ones. As is shown by the examples, such transitive verbs can be used in the active voice, as in (4.2), or in the passive voice, as in (4.3). In addition, I will focus on the distinctions between copular verb and transitive verb constructions, and I will relate these to the attribution of stance and the conceptual categories of the conceptual map.

1.1 The rise of the copular extraposition construction

As mentioned above, the extraposition constructon (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 fact, the complement constructions in which the adjectives studied here are first attested are commonly analysed as **subjectless constructions** (SLCs). In this section, I will concentrate on copular expressions, and I will discuss the change from subjectless to extraposition construction, as evidenced by the adjectival data.

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 OE 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). The predicates that can occur in these

constructions differ in terms of valency.[61] The SLCs I am concerned with feature two-place predicates, that is, they generally involve two distinct semantic roles: one argument is the Experiencer (animate nominal), and the other is usually termed Cause or Theme (nominal or clausal) (Anderson 1986; Fischer and Van der Leek 1983, 1987). These roles apply across the various semantic classes of impersonal predicates.[62] The semantic class to which the adjectival predicates studied here belong is commonly called the **'behove' class** (Elmer 1981: 40–43; Denison 1993: 66). These predicates are found most frequently in constructions with a clausal Theme (with or without an explicit Experiencer) (Elmer 1981: 41). In keeping with Fischer and Van der Leek (1983: 347–354), three surface patterns can be distinguished, which they call type (i), (ii) and (iii). Examples of these patterns are given in (4.4) to (4.6). Of these types with nominal arguments, types (i) and (ii) are important here, as either one may serve as a model for the equivocal pattern with a clausal argument, viz. type (i/ii) in Denison (1993: 64–66), illustrated in (4.7).

(4.4) Type (i): subjectless construction
Dative Experiencer; Genitive Theme/Cause; 3 SG finite
þonne þe salteres **beþurfe**
when you.DAT psalter.GEN need.PRES.SUBJ.3SG
'when you need a psalter' (Wal. 94, cited in Elmer 1981: 66 (24)) (my glosses and translation)

(4.5) Type (ii): Theme/Cause-subject construction
Dative Experiencer; Nominative Theme/Cause; finite agreeing with Nom NP
þe **gerliseþ** lofsang
you.DAT befit.PRES.IND.3SG praise.NOM
'A song of praise befits you' (BT, cited in Elmer 1981: 68 (37)) (my glosses and translation)

(4.6) Type (iii): Experiencer-subject construction
Nominative Experiencer; Genitive Theme/Cause; finite agreeing with Nom NP
he **beþearf** eacmicles fultumes
he.NOM need.PRES.IND.3SG also great.GEN help.GEN
'he needed also great help/support' (BT, cited in Elmer 1981: 73 (45)) (my glosses and translation)

[61] In particular, there are zero-place SLCs (e.g. *rineð* 'it is raining'), one-place SLCs (e.g. *longað hine hearde* 'he strongly feels discontent'), two-place SCLs (e.g. *him ofhreow þæs mannes* 'he pitied the man'), and SLCs with more than two arguments (Denison 1993: 61–73).

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

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

Types (i) to (iii) are generally agreed on.[63] More controversy exists on type (i/ii), viz. it is a matter of dispute whether it is a true subjectless construction like type (i) or a Theme/Cause-subject construction like type (ii).[64] This controversy indicates that the relation between the adjectival matrix and the clausal complement in constructions such as (4.8) and (4.9) below is not straightforward. In any case, most scholars concur that the constructions containing the adjectives studied here are of type (i/ii) (e.g., Visser 1972: §903; Elmer 1981: 42; Traugott 1992: 212; Denison 1993: 66). In both examples, the clausal complement occurs in post-verbal position, which is invariably the case in Old English SLCs (cf. Visser 1972: §898; Elmer 1981: 23; Fischer and Van der Leek 1983: 349; Traugott 1992: 217).[65] The expression in (4.8) has a clausal Theme only, whereas that in (4.9) contains both an Experiencer and a clausal Theme.

(4.8) Þonne is swiðe **rihtlic**, þæt Godes ciricgrið binnon wagum &
then is very fitting, that of.God church.grith within walls and
Cristenes ciningces handgrið stande æfre unwemme.
of.Christian of.king handgrith stand.PRES.SUBJ ever unblemished
'Then it is very fitting that God's church-grith and the Christian king's handgrith should ever stand/remain unblemished inside the walls.' (YCOE 1040–1060 LawICn 2.2)

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[63] It should be noted that Elmer (1981: 40) regards *(be)þurfan*, *behofian*, and *geneodian* as necessity predicates ('to have need of', 'require') rather than pure 'behove' predicates ('be fitting', 'behove', 'befit') such as *gedafenian*, *gerisan* or the adjectival matrices discussed here. In his data, those proper 'behove' predicates – unlike the necessity predicates – are not attested in type (i) and (iii) (Elmer 1981: 65, 73).

[64] In the discussion, three different positions are being advocated. In one view, the clauses are complements of a true SLC (type (i)) (e.g., Elmer 1981). The opposite view regards the clauses as Theme-subject clauses (type (ii)) (e.g., Callaway (1913: 7) for *to*-clauses; Warner (1982: 108–109) for both *that*-clauses and *to*-clauses in ME; Mitchell (1985: §1963) for *that*-clauses; *to*-clauses can be either subjects or subject complements (1985a: §1540)). The third view includes both analyses. Visser (1972: §863, §903), for example, deals with the clauses under the heading of subject clauses, but describes them as complements of 'impersonal phrases'. The most convincing answer is found in Fischer and Van der Leek (1983: 348–349), Traugott (1992: 235), and Denison (1993: 64), stating that the situation is undecidable.

[65] It is only in the course of the Middle English period that the clausal complements start to occur in preverbal position (cf. Warner 1982: 65, 108; Fischer 1992: 313). The finding that the non-extraposed variant appears later than the 'extraposed' one shows that extraposition as a transformation has no diachronic validity. Nevertheless, I use the term here as it is well established in the literature, also in non-generative accounts, cf. Kaltenböck 2000.

(4.9) & þonne him **ðearf** sie ma manna up mid him to habbanne
And when to.him necessary be.PRES.SUBJ more of.men up with him to have
on hiora fore, gecyðe symle, swa oft swa
on their expedition, make.known.PRES.SUBJ always, as often as
him ðearf sie, in gemotes gewitnessecyninges gerefan.
to.him necessary be.PRES.SUBJ, inof.council testimony of.king of.reeve
'When it is necessary to him to have more men with him on their expedition, he should always make it known, as often as it is necessary to him, in testimony of the council (and) of the king's reeve.' (YCOE 890–999 LawAf 1 34.1)[66]

In Present-day English, the pattern in (i) is not in use anymore. In the diachronic literature, many explanations have been put forward for the loss of this SLC. The most influential view is that of Jespersen (1909–1949: iii 208–212, 352–355; vii 244–249) and Van der Gaaf (1904), who argue that the non-subject NPs were reanalysed as subjects in the Middle English period. This **reanalysis** is ultimately put down to changes in word order (viz. the rise of SVO word order and the development of V-2 cf. Trips 2002) (Denison 1993: 73–96). This view (or parts of it) has been adopted by Elmer (1981), Krzyszpień (1984), Lightfoot (1979, 1981), von Seefranz-Montag (1984), and Fischer and Van der Leek (1987) (for a detailed discussion of these and other authors on the subject, I refer to Denison (1993: 73–96)). Other explanatory factors that are regularly invoked include the breakdown of the morphological case system and the growing (surface) subject constraint for all finite clauses. With regard to the adjectival constructions studied here, the rising frequency of dummy *it* (cf. Table 4.1) indicates that the constructions increasingly obey the surface subject constraint. In fact, in Present-day English *it* has become the rule when the clausal complement is not located in sentence-initial position (i.e., a preposed clause). Consequently, the relation between the adjectival matrix and the clause is not undecidable anymore: the clauses function as subject of the adjectival matrix, and *it* serves as anticipatory subject. In what follows, I will discuss the (empty) subjects found in the

[66] Together with *niedðearf*, *ðearf* can also function as a noun in Old English (Bosworth and Toller 1898: 719a; Hall 1916: 214b; TOE). In SLCs, *niedðearf* and *ðearf* may be specified or modified adnominally, for example 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.

(i) Cwæð ic: ic wat þæt me ðæs is micel **ðearf** þæt ic halwendum
said I: I know that to.me of.that is great necessity that I to.salutary
weacenum ætfeole, & for minum gedwolum & synnum geornlice
to.vigils adhere.PRES.IND/SUBJ, and for my errors and sins zealously
Dryhten bensie.
Lord supplicate.PRES.IND/SUBJ
'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)

adjectival data. The distribution of these forms is presented in Table 4.1, covering the period from Old English[67] to Early Modern English.

Compl clause	Sub-ject	EOE 750–950		LOE 950–1150		EME 1150–1350		LME 1350–1500		EModE 1500–1710	
		n	%	n	%	n	%	n	%	n	%
that-clause	Ø	26	63.41	44	57.89	5	50.00	1	3.33	3	3.16
	(h)it	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**
to-clause	Ø	9	90.00	5	100	6	54.55	4	7.84	1	0.95
	(h)it	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
	(h)it	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**

Table 4.1: The distribution of surface subject forms in copular constructions with *that*-clauses and *to*-clauses[68] (dem: demonstrative; *this* or *that*)

In general, Table 4.1 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 (4.10) below (termed the 'EC-POPC' in section 2.2.2.1). In the LModE and PDE data (not presented here), dummy *it* occurs without exception. Since after the ME period *it* has become virtually obligatory, we can conclude that the change from subjectless

[67] 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). Out of a total of 100 declarative main clauses, *hit* (or *þæt* in 10 cases, see below) assures V-2 order in only 16 instances. In 11 cases, the surface forms even prevent V-2 order. In 4 cases they are irrelevant to V-2 order, and in 69 cases, they do not appear. However, out of these 69 cases, 49 do have V-2 order, as the copula is preceded by an Experiencer, adverbial phrase, or adjective. In subclauses, where V-2 is not expected, surface subject forms assure V-2 order in 10 cases out of 32. In 7 out of the 15 cases in which no surface form is present, the word order is still V-2. It can thus be concluded that surface subject forms are most frequently used when no other constituent has taken the pre-verbal position (in both main clauses and subclauses). Reversely, they are mostly absent when this position has been filled (cf. Allen's (1986) conclusions of her analysis of 'happen' class predicates in Old English).

[68] The *to*-infinitive constructions in Table 4.1 include subjectless/extraposed constructions (SLC/EC) and extraposed – post-predicate constructions (EC-POPC) (see section 2.2.2.1 below).

construction to extraposition construction must have occurred in ME, as has been described in the literature (see also note 6).

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

There is debate on the status of the form (*h*)*it* in SLCs. More specifically, it has been questioned whether it is an empty subject slot filler with no reference to the complement or a pronoun referring cataphorically to a subject complement (Traugott 1992: 217). In essence, this restates the question of the relation between matrix and complement discussed above (viz. is the construction studied of type (i) as in (4.4) or of type (ii) as in (4.5)?).[69] However, it has to be noted that up to 1350 some *that*-clause constructions appear with deictic *that* in the matrix (2.44% to 30.00%), as in (4.11) below (cf. Table 4.1).

(4.11) **Rihtlic** þæt wæs þæt se blinda be ðæm wege sæte wædliende;
fitting that was that the blind.one by the way sit.PAST.SUBJ begging;
forþon þe Drihtensylfa cwæþ, Ic eom weg soðfæstnesse;
because the Lord himself said, I am way of.truth
'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 (BlHom 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 such as (4.11) thus seem to suggest 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).

In conclusion, although some Old English constructions with anticipatory *that* suggest that the clausal complements in the data presented here function as subject of the matrix finite, quite a few scholars maintain that the question of the syntactic function of the complement in relation to the matrix is undecidable in the earliest data (viz. either a true SLC or a Theme/Cause-subject construction). Towards the LModE period, however, the question has been resolved in favour of a subject clause analysis, which is evidenced by the exceptionless occurrence of dummy *it* with extraposed subject clauses. The adjectival data therefore offer additional evidence for the rise of the extraposition construction and,

[69] Again, the discussion provokes three positions. In one view, the form *(h)it* is semantically empty (e.g., Wahlén 1925: 8–11, Mitchell 1985: §1031, Elmer 1981: 54–57). Others have argued that all uses of *(h)it* are meaningful and therefore have reference (e.g., Bolinger 1977: 66–90, Bennis 1986: 284). The third position treats the question as undecidable, although the analysis as dummy seems to be preferred (e.g., Traugott 1992: 217). For a more detailed discussion, I refer to Denison (1993: 97–99).

more generally, for well-established processes of syntactic change, which resulted in the loss of SLCs and the generality of SVO word order with a surface subject.

1.2 Copular and transitive verb constructions in the conceptual map

This section concentrates on the two subtypes of extraposition construction introduced above, viz. the copular verb (discussed in the previous section) and the transitive verb construction. As already mentioned, these constructions are semantically similar, in that they both involve a predicative relationship between a dummy element (*it*) and an adjective, which is complemented by a clause. However, this section will mainly focus on the differences between the two types: it will become clear that they not only differ in the syntactic function of the complement in relation to the matrix, but also in the types of conceptual meaning they can express.

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 (4.1) to (4.3) given above. Example (4.12) 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 with the adjective functioning as a subject complement. Example (4.13) is a transitive extraposition construction, in which the clausal complement functions as object of the active finite *think* (with dummy *it* functioning as anticipatory object). The adjective, in turn, 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). Example (4.14), finally, is a transitive extraposition construction as well, but it has a passive finite (*was considered*), so that the clausal complement functions as subject of the matrix finite. Syntactically, therefore, the passive transitive EC is more similar to the copular EC than to the active transitive EC.

(4.12) 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)

(4.13) 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)

(4.14) 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. They were now older, better educated, and of a higher income level than when they had first joined 10 or 15 years before. (CB, ukbooks)

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 chapter 1, section 2.3.1). 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. In fact, 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 (4.13) above), *consider*, *find* or *hold*. The second set of verbs includes causative predicates, such as *make* or *render*, as in (4.15) below. 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. Importantly, the two sets of verbs can also be related to the conceptual categories 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 designates the compelling circumstance. In (4.15) below, 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, viz. either deontic meaning, as in (4.13)–(4.14) above and (4.16) below, or non-modal evaluative meaning as in (4.17) (see chapter 1, section 2.3.1, (1.75)).

(4.15) 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*)

(4.16) 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, to which bigotry and ignorance would have excited him. (CLMETEV 1753 Cibber, *The lives of poets of Great Britain and Ireland* (Vol. 1))

(4.17) 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)

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 expressed by the object complement clause, viz. the syntactic subject of the transitive verb (as *we* in (4.13)). In such constructions with a *to*-clause complement, the attitudinal source and the agent expected to carry out the SoA typically coincide, as in (4.16): 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 (4.14), it is not obvious whether the speaker wants to associate or rather dissociate him/herself with/from the assessment (cf. Biber et al. 1999: 977). As mentioned above, the copular EC 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 et al. 1999: 977). I will return to the distribution of the matrix constructions across the conceptual map in chapter 6.

After these general remarks and findings, we can now turn to the specifics of the adjectival data. Table 4.2 below shows the relative share of copular, active transitive and passive transitive ECs across the various **historical periods**.

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	that-cl	n	41	76	10	30	95	943	943
		%	78.85	92.68	47.62	36.59	30.74	17.99	29.81
	to-cl	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**	**1252**	**2,965**
		%	**98.08**	**98.78**	**100**	**98.78**	**64.72**	**65.48**	**93.74**
active transitive EC	that-cl	n	0	1	0	1	13	33	19
		%	0.00	1.22	0.00	1.22	4.21	1.73	0.60
	to-cl	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	that-cl	n	0	0	0	0	1	12	2
		%	0.00	0.00	0.00	0.00	0.32	0.63	0.06
	to-cl	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	1912	3163
		%	100	100	100	100	100	100	100

Table 4.2: The diachrony of clausal complementation in copular and (active and passive) transitive constructions: *that*-clauses and *to*-clauses[70]

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 SLC/EC, see section 1.1 above.) 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% to 1.62%). The LModE data present a similar distribution. In PDE, the copular EC has

[70] The *to*-infinitive constructions in Table 4.2 include subjectless/extraposed constructions (SLC/EC) and extraposed – post-predicate constructions (EC-POPC) (see section 2.2.2.1 below).

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 (4.15)–(4.16) and (4.12)–(4.14) respectively.

(4.18) We forði foresceawiað and **fremful** taliað to gehealdsumnesse gemænre
we therefore foresee and profitable consider to keeping of.general
sibbe and soþre lufe, þæt eal mynstres fadung and endebyrdnesse
of.friendship and of.true of.love, that all of.monastery order and arrangement
on þæs abbodes dome and tæcinge simle stande.
in of.the of.abbot authority and command always stand.PRES.SUBJ
'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)

(4.19) he held it **expedient** to honowrof þe blisful Trinite þat hys holy werkys xulde
he held it expedient to honour of the blissful trinity that his holy works should
be notifyid & declaryd to þe pepil, whan it plesyd hym, to þe worschip
of be notified and declared to the people, when it pleased him, to the worship
of hys holy name.
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 *a*1438 MKempe A 221)

(4.20) 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 *c*1523–1524 More, *Letter to Wolsey*)

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 data, viz. *that*- and *to*-clauses. Section 2.1 will discuss the finite *that*-clauses, whereas section 2.2 will elaborate on the (less finite or non-finite) *to*-clauses. Examples of the various formal types are given in (4.21) to (4.23).

(4.21) A veteran of forty years' service in the Indian Army, he did not welcome disruption of his comfortable niche. Since any changes in the Indian system were bound to come up against the opposition of the meddlesome Hardinge, it was **essential** that Haig <u>be</u> supported in his work by Creagh. (CB, ukbooks)

(4.22) 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 and, to ensure that this is the case in Wandsworth, we have sent our leaflet boroughwide." (CB, ukmags)

(4.23) The bowlers were tired and frustrated and Stewart knocked them around, sometimes with considerable violence. And it was entirely **appropriate** – fated, even – that Stewart should be batting when Atherton edged Pollock to the third-man boundary for his hundred. It had taken 269 balls. Never can the passing of power have been so smooth and so happy. (CB, sunnow)

(4.24) 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 and a contemporary dance company will be invited to lead off the evening, before the parade of an international fashion collection. (CB, ukephem)

The constructions in (4.21) to (4.23) all involve *that*-clauses, but these have different finite forms (underlined in the examples): a subjunctive form in (4.21), an indicative form in (4.22), and a modal auxiliary in (4.23). The construction in (4.24) contains a *to*-infinitival complement.

In addition to the formal features of the complements, sections 2.1 and 2.2 will also discuss the **semantic distinction** between mandative and propositional complement clauses. As explained in chapter 1, sections 2.2.2 and 2.2.3, mandative complements are the type of clausal complement found in deontic constructions, referring to virtual or potential SoAs that are assessed as desirable, as in (4.21), (4.22) and (4.24). 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 (4.23). 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, these sections illustrate the diachronic validity of the conceptual map.

Finally, section 2.3 will compare the two formal types of complement and discuss their diachronic **distribution**. It will be shown that the mandative adjectival SLC/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 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.

2.1 That-*clauses*

This section focuses on the type of clausal complement that was the most prominent one in Old English, viz. the *that*-clause (cf. Fischer et al. 2000: 62). In what follows, I will discuss its origin in section 2.1.1, and the development of the finite verb form in section 2.1.2.

2.1.1 *The origin of the* that-*clause*

It is commonly accepted that the PDE *that*-clause originates in a less tight or more independent structure (Mitchell 1985; Traugott 1992; Hopper and Traugott 1993[71]). More specifically, it is 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 *said*, but at the same time it cataphorically refers to the next clause, which is conceptually relevant for 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 (4.25) 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 used as a cataphoric pronoun at the time when the complementizer use has already been established.

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

More specifically, in (4.25) 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 (4.25) does not contain two independent units, but rather one main and one dependent clause. As discussed in section 1.1 above, the adjectival data include similar examples, cf. (4.11). To my knowledge, such correlative structures with adjectival matrices have not been noticed so far (e.g., Hopper and Traugott 1993: 187), and they may shed a new light on the syntactic relation between matrix and complement (see section 1.1). In

[71] 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". Lehman (1988) lists a few parameters of this type of change.

any case, they show that complementizer *that* previously occurred in looser, more independent structures than in PDE. This is also evidenced by the finding that *that*-clauses appear in clause-initial subject position only in the fourteenth century (Warner 1982: 81). In PDE, *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 2008), the English form *that* shows a clear 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).

2.1.2 The development of the finite verb form

Throughout the history of English, *that*-clauses have been construed with a finite verb phrase. The Present-day English examples (4.21) to (4.23) showed that these finite verb phrases can differ in form. In this section, it will become clear that the distribution of the formal types underwent considerable changes throughout history. Whereas in Old English *that*-clauses, finites typically occur in the subjunctive mood, later periods witness the rise of indicative forms and modal auxiliaries, especially the modal *should*. In what follows, 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, viz. mandative and propositional clauses. Interestingly, it will become clear that the two semantic types of complement become formally differentiated in terms of mood from Middle English onwards. More generally, the data will illustrate the diachronic validity of the conceptual map, as strong adjectives are found with mandative complements only, whereas weak ones pattern with both mandative and propositional from across the various historical periods.

In the diachronic literature, much attention has been paid to the development of the subjunctive form,[72] or, in Visser's (1972: §834) terms, "the modally marked form". In this section, I will focus on what has been written on 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 two tables per period, the first one presenting the raw figures or absolute frequencies, and the second one the normalized or relative frequencies per

100,000 words.[73] In general, the data clearly show the overall change in the coding of the complement finite verb, viz. a **decrease of subjunctive forms** and an increase of modal forms, often termed 'periphrastic alternants' (e.g., Övergaard 1995). The normalized figures are summarized in Figure 4.1 below. In what follows, I will discuss the various stages of this change chronologically, and I will focus on the semantic value of the subjunctive mood and the distinction between mandative and propositional complements.

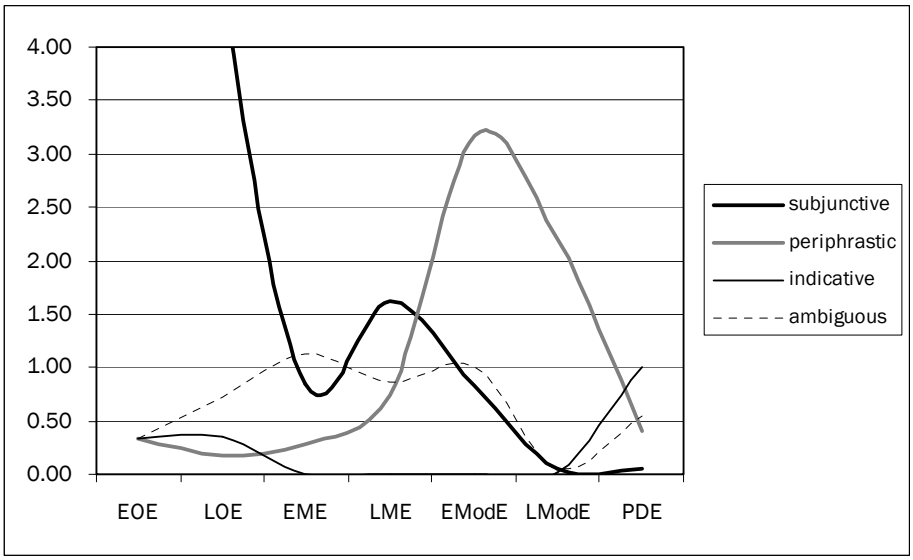

Figure 4.1: The development of the finite form in *that*-clauses with adjectival SLC/ECs

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.[74] Even if its

[72] 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 chapter 1, section 1.3.1).

[73] The normalized frequencies have been rounded to two decimal places, or, in case of figures with larger decimals, to at least two significant digits. In Tables 4.3 to 4.16, 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. For the tense of the matrix, however, we can detect a temporary effect, as will be explained below.

[74] 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

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, in turn, suggests that the mood type does have a semantic value, which can in fact be thought of as mandative. In a similar vein, 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 2.2.2.1 below). However, 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 chapter, the subjunctive is the rule.[75] 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 tenseless SoAs), such as *it is behoveful*, *it is needful*, which is less frequent than that of the subjunctive (Visser 1972: §742).

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 *wære* are ambiguous.

[75] 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).

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	pres	ind	21	19	1	-	1	-	-	-
			mod	1	-	1	-	-	-	-	-
		past	ind	-	-	-	-	-	-	-	-
			mod	-	-	-	-	-	-	-	-
		TOTAL		**22**	**19**	**2**	**-**	**1**	**-**	**-**	**-**
weak	mand	pres	ind	14	14	-	-	-	-	-	-
			mod	-	-	-	-	-	-	-	-
		past	ind	1	-	-	-	-	1	-	-
			mod	2	-	-	-	-	-	1	1
		TOTAL		**17**	**14**	**-**	**-**	**-**	**1**	**1**	**1**
	prop	pres	ind	1	-	-	1	-	-	-	-
		past	ind	1	-	-	-	-	1	-	-
		TOTAL		**2**	**-**	**-**	**1**	**-**	**1**	**-**	**-**

Table 4.3: The form of the finite verb in *that*-clauses after strong and weak adjectives in EOE (YCOE 750–950), absolute frequencies

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	pres	ind	6.91	6.25	0.33	-	0.33	-	-	-
			mod	0.33	-	0.33	-	-	-	-	-
		past	ind	-	-	-	-	-	-	-	-
			mod	-	-	-	-	-	-	-	-
		TOTAL		**7.24**	**6.25**	**0.66**	**-**	**0.33**	**-**	**-**	**-**
weak	mand	pres	ind	4.61	4.61	-	-	-	-	-	-
			mod	-	-	-	-	-	-	-	-
		past	ind	0.33	-	-	-	-	0.33	-	-
			mod	0.66	-	-	-	-	-	0.33	0.33
		TOTAL		**5.60**	**4.61**	**-**	**-**	**-**	**0.33**	**0.33**	**0.33**
	prop	pres	ind	0.33	-	-	0.33	-	-	-	-
		past	ind	0.33	-	-	-	-	0.33	-	-
		TOTAL		**0.66**	**-**	**-**	**0.33**	**-**	**0.33**	**-**	**-**

Table 4.4: The form of the finite verb in *that*-clauses after strong and weak adjectives in EOE (YCOE 750–950), relative frequencies per 100,000 words

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	*mythte*
strong	mand	pres	ind	18	14	2	1	1	-	-	-	-
			mod	-	-	-	-	-	-	-	-	-
		past	ind	2	-	-	-	-	2	-	-	-
			mod	1	-	-	-	-	1	-	-	-
		TOTAL		**21**	**14**	**2**	**1**	**1**	**3**	**-**	**-**	**-**
weak	mand	pres	ind	32	30	2	-	-	-	-	-	-
			mod	3	3	-	-	-	-	-	-	-
		past	ind	5	-	-	-	-	2	1	1	1
			mod	7	-	-	-	-	6	-	1	-
		TOTAL		**47**	**33**	**2**	**-**	**-**	**8**	**1**	**2**	**1**
	prop	pres	ind	5	3	-	-	-	-	1	1	-
		past	ind	4	-	-	-	-	1	2	1	-
		TOTAL		**9**	**3**	**-**	**-**	**-**	**1**	**3**	**2**	**-**

Table 4.5: The form of the finite verb in *that*-clauses after strong and weak adjectives in LOE (YCOE 950–1150), absolute frequencies

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	*mythte*
strong	mand	pres	ind	1.59	1.23	0.18	0.088	0.088	-	-	-	-
			mod	-	-	-	-	-	-	-	-	-
		past	ind	0.18	-	-	-	-	0.18	-	-	-
			mod	0.088	-	-	-	-	0.088	-	-	-
		TOTAL		**1.85**	**1.23**	**0.18**	**0.088**	**0.088**	**0.26**	**-**	**-**	**-**
weak	mand	pres	ind	2.82	2.64	0.18	-	-	-	-	-	-
			mod	0.26	0.26	-	-	-	-	-	-	-
		past	ind	0.44	-	-	-	-	0.18	0.088	0.088	0.088
			mod	0.62	-	-	-	-	0.53	-	0.088	-
		TOTAL		**4.14**	**2.91**	**0.18**	**-**		**0.71**	**0.088**	**0.18**	**0.088**
	prop	pres	ind	0.44	0.26	-	-	-	-	0.088	0.088	-
		past	ind	0.35	-	-	-	-	0.088	0.18	0.088	-
		TOTAL		**0.79**	**0.26**	**-**	**-**	**-**	**0.088**	**0.26**	**0.18**	**-**

Table 4.6: The form of the finite verb in *that*-clauses after strong and weak adjectives in LOE (YCOE 950–1150), relative frequencies per 100,000 words

The Old English data presented in Tables 4.3 to 4.6 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.

(4.26) Us is þonne **nedþearf** þæt we secan þone læcedomure sauwle;
to.us is then necessary that we seek.PRES.SUBJ the salvation of.our of.soul
forþon þe Drihten is swiðe mildheort se us trymede & lærde.
because PRT Lord is very merciful 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 merciful.' (YCOE 990–1010 HomU 19 (BlHom 8): 22) (mandative)

(4.27) Þurh þone Halgan Gast hie inneweardum heortum ecelice burnon
through the holy ghost they with.inward with.hearts perpetually burned
þære Godes lufan, swa þæt **gelimplic** wæs þæt þa ætgædere
of.the of.God with.love, so that appropriate was that those together
wæron on ecre stowe, þa þe on heora heortan & on willan on God
be.PAST.IND in eternal place, they who in their heart and in will in God
gecyrred wæron.
turned be.PAST.IND
'Through the Holy Ghost they were burning perpetually with God's love, with their whole hearts, so that it was appropriate that those be together in the eternal place, they who were turned to God in their hearts and will.') (YCOE 990–1010 HomS 47 (BlHom 12) 47) (mandative)

(4.28) Wæs þæt eac **gedefen**, þætte þæt swefn gefylled wære,
was that also fitting, that that vision fulfilled be.PAST.SUBJ
þætte Breogoswið hire modor geseah on hire cildhade.
that.REL.PRON Breogoswith her mother saw in her childhood
'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)

(4.29) Anhafen ic wæs, genyþerod and gescend; and eft: **God** me is,
Exalted I was, oppessed and disgraced; and afterwards: good to.me is,
þæt þu me genyþeradest, þæt ic leornige þine bebode.
that you me oppress.PAST.IND, that I learn.PRES.SUBJ 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)

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	-	-	-	-	-	-	-	-
		past	ind	-	-	-	-	-	-	-	-
			mod	-	-	-	-	-	-	-	-
		TOTAL		**1**	**1**	**-**	**-**	**-**	**-**	**-**	**-**
weak	mand	pres	ind	6	2	3	-	1	-	-	-
			mod	1	-	-	-	-	-	-	1
		past	ind	1	-	-	-	-	-	1	-
			mod	1	-	-	-	-	1	-	-
		TOTAL		**9**	**2**	**3**	**-**	**1**	**1**	**1**	**1**
	prop	pres	ind	-	-	-	-	-	-	-	-
		past	ind	-	-	-	-	-	-	-	-
		TOTAL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table 4.7: The form of the finite verb in *that*-clauses after strong and weak adjectives in EME (PPCME 1150–1350), absolute frequencies

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	0.28	0.28	-	-	-	-	-	-
			mod	-	-	-	-	-	-	-	-
		past	ind	-	-	-	-	-	-	-	-
			mod	-	-	-	-	-	-	-	-
		TOTAL		**0.28**	**0.28**	**-**	**-**	**-**	**-**	**-**	**-**
weak	mand	pres	ind	1.70	0.57	0.85	-	0.28	-	-	-
			mod	0.28	-	-	-	-	-	-	0.28
		past	ind	0.28	-	-	-	-	-	0.28	-
			mod	0.28	-	-	-	-	0.28	-	-
		TOTAL		**2.56**	**0.57**	**0.85**	**-**	**0.28**	**0.28**	**0.28**	**0.28**
	prop	pres	ind	-	-	-	-	-	-	-	-
		past	ind	-	-	-	-	-	-	-	-
		TOTAL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table 4.8: The form of the finite verb in *that*-clauses after strong and weak adjectives in EME (PPCME 1150–1350), relative frequencies per 100,000 words

Type of adj	Comp: sem	Matrix: form		TOT	Complement verb: form							
					pres subj	pres amb	pres ind	past subj	past amb	past ind	*should*	*myhte*
strong	mand	pres	ind	5	5	-	-	-	-	-	-	-
			mod	-	-	-	-	-	-	-	-	-
		past	ind	-	-	-	-	-	-	-	-	-
			mod	-	-	-	-	-	-	-	-	-
		TOTAL		**5**	**5**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
weak	mand	pres	ind	14	8	5	-	-	-	-	1	-
			mod	2	2	-	-	-	-	-	-	-
		past	ind	5	-	-	-	-	1	-	4	-
			mod	3	-	-	-	-	1	-	2	-
		TOTAL		**24**	**10**	**5**	**-**	**-**	**2**	**-**	**7**	**-**
	prop	pres	ind	1	-	-	-	-	1	-	-	-
		past	ind	1	-	-	-	-	-	-	-	1
		TOTAL		**2**	**-**	**-**	**-**	**-**	**1**	**-**	**-**	**1**

Table 4.9: The form of the finite verb in *that*-clauses after strong and weak adjectives in LME (PPCME 1350–1500), absolute frequencies

Type of adj	Comp: sem	Matrix: form		TOT	Complement verb: form							
					pres subj	pres amb	pres ind	past subj	past amb	past ind	*should*	myhte
strong	mand	pres	ind	0.62	0.62	-	-	-	-	-	-	-
			mod	-	-	-	-	-	-	-	-	-
		past	ind	-	-	-	-	-	-	-	-	-
			mod	-	-	-	-	-	-	-	-	-
		TOTAL		**0.62**	**0.62**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
weak	mand	pres	ind	1.74	1.00	0.62	-	-	-	-	0.12	-
			mod	0.25	0.25	-	-	-	-	-	-	-
		past	ind	0.62	-	-	-	-	0.12	-	0.50	-
			mod	0.37	-	-	-	-	0.12	-	0.25	-
		TOTAL		**2.99**	**1.24**	**0.62**	**-**	**-**	**0.25**	**-**	**0.87**	**-**
	prop	pres	ind	0.12	-	-	-	-	0.12	-	-	-
		past	ind	0.12	-	-	-	-	-	-	-	0.12
		TOTAL		**0.25**	**-**	**-**	**-**	**-**	**0.12**	**-**	**-**	**0.12**

Table 4.10: The form of the finite verb in *that*-clauses after strong and weak adjectives in LME (PPCME 1350–1500), relative frequencies per 100,000 words

In Middle English, the share of subjunctive forms has decreased to 48.78%. Tables 4.9 and 4.10 most clearly indicate the **locus of change**: the complement clauses of all past matrices feature either an ambiguous finite 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.[76] 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-)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*).

(4.30) La, fæder, us is þæt swiþe mycel gewinn, þæt we for þam wætere
oh, father, to.us is that very great toil, that we for the water
daga gehwilce ofdune stigað to þam seaðe. Forþon us is **nydþearf**,
day whichever down go to the well. Therefore to.us is necessary,
þæt þa mynstru of þære stowe moten beon gecyrrede to oþre stowe.
that the monasteries of that place must.PRES.SUBJ 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)

The use of periphrastic alternants soon spreads from past to present contexts (Traugott 1972: 150);[77] Fischer writes that this happens from about 1300 onwards for the form *should* (1992: 315). In fact, Table 4.9 shows one example with a present matrix and *should* in the complement. In the paradigm of the present tense, phonetic reduction causes homophony as well, especially in the Midland areas. More specifically, the plural forms have *–es* in the indicative, but the ending *–e(n)* can be used for either indicative or subjunctive (Lass 1992: 137). In this study, plural forms ending in *–en* or *–e* were counted as ambiguous.[78] To continue the argument on the influence of the tense of the matrix on the coding of the finite form, I have arranged the relevant data from Tables 4.3 to 4.10 above and Tables 4.12, 4.13 and 4.15 to 4.18 below in Table 4.11.

[76] More specifically, 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). In addition, 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 4.9, for example, only one could have been construed with a distinctive subjunctive form.

[77] Fischer (1992: 247) notes that in addition to periphrastic variants, the function of the past subjunctive is taken over by the past indicative, termed the 'modal preterite' (see, for instance, Visser 1972: §812–820). The use of the modal preterite also extends 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.

[78] 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, viz. *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).

Matrix	Finite form	Fr	OE 750–1150	ME 1150–1500	EModE 1500–1710	LModE 1710–1920	PDE 1990–1995
present	subjunctive forms	n	85	19	14	10	14
		N	5.91	1.64	0.78	0.067	0.033
		%	**89.47**	**63.33**	**17.95**	**3.86**	**1.75**
	periphrastic alternants	n	2	2	45	237	107
		N	0.14	0.17	2.51	1.58	0.25
		%	**2.11**	**6.67**	**57.69**	**91.51**	**13.34**
	total	n	95	30	78	259	802
		N	6.61	2.60	4.35	1.73	1.90
		%	100	100	100	100	100
past	subjunctive forms	n	13	1	5	1	18
		N	0.90	0.087	0.28	0.0067	0.043
		%	**56.52**	**9.09**	**16.13**	**0.77**	**11.11**
	periphrastic alternants	n	1	7	22	126	66
		N	0.070	0.61	1.23	0.84	0.16
		%	**4.35**	**63.64**	**70.97**	**96.92**	**40.74**
	total	n	23	11	31	130	162
		N	1.60	0.95	1.73	0.87	0.39
		%	100	100	100	100	100

Table 4.11: The frequency of subjunctive forms and periphrastic alternants in present and past matrices[79] (n: absolute frequency; N: relative frequency per 100,000 words; %: relative share)

Table 4.11 bears out the overall decrease in frequency of the subjunctive forms in mandative *that*-clauses. It also clearly shows that the tense of the matrix has played a crucial role in the Middle English period, with subjunctive forms occurring in 63.33% of the present context data, but only in 9.09% of the past context data. The periphrastic forms show a reverse development. In addition to a steady increase of these forms, the figures confirm that the difference in relative shares in present contexts as opposed to past ones is most pronounced for the Middle English period as well, viz. 6.67% versus 63.64% respectively. In EModE and especially LModE, the relative shares of the subjunctive forms and the periphrastic expressions in present and past contexts are much more similar. In PDE, the share of periphrastic alternants is again smaller in present than in past contexts, but not as markedly as in ME. We can therefore conclude that the tense of the matrix clause has had an effect on the formal coding of the finite only temporarily, mainly in the Middle English period.

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

[79] It should be noted that the total numbers of both present and past *that*-clauses in this table include indicative and morphologically ambiguous finite forms, in addition to subjunctive and periphrastic forms.

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 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 pre-modals, especially **sculan*. More specifically, this verb expresses moral and financial obligation in Old English, but its past form *sceolde*(*n*) is also used with evidential 'hearsay' meaning in reported clauses (Traugott 1989: 39–42). In this sense, it already has an epistemic colouring in OE, which further develops throughout the ME period. The form thus comes 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 chapter 1, section 2.2.2). In these last expressions *should* is termed 'emotional *should*' (Jespersen 1933: 287) or 'attitudinal *should*' (Huddleston and Pullum 2002: 1001),[80] 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 the modal auxiliaries did not only trigger the overall loss in frequency of the subjunctive but also its semantic specialization.

Type of adj	Comp: sem	Matrix: form		TOT	Complement verb: form								
					pres subj	pres amb	pres ind	past subj	past amb	past ind	*should*	*shall*	*may*
strong	mand	pres	ind	22	7	5	-	1	-	-	9	-	-
			mod	1	-	-	-	-	-	-	1	-	-
		past	ind	7	1	-	-	-	-	-	6	-	-
			mod	-	-	-	-	-	-	-	-	-	-
		TOTAL		**30**	**8**	**5**	**-**	**1**	**-**	**-**	**16**	**-**	**-**
weak	mand	pres	ind	48	5	11	-	1	-	-	30	1	-
			mod	2	1	-	-	-	-	-	1	-	-
		past	ind	8	-	-	-	-	-	-	8	-	-
			mod	15	-	-	-	4	2	2	7	-	-
		TOTAL		**73**	**6**	**11**	**-**	**5**	**2**	**2**	**46**	**1**	**-**
	prop	pres	ind	4	-	2	-	-	-	-	2	-	-
			mod	1	-	-	-	-	-	-	-	-	1
		past	ind	1	-	-	-	-	-	-	1	-	-
		TOTAL		**6**	**-**	**2**	**-**	**-**	**-**	**-**	**3**	**-**	**1**

Table 4.12: The form of the finite verb in *that*-clauses after strong and weak adjectives in EModE (PPCEME 1500–1710), absolute frequencies

[80] 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.

Type of adj	Comp: sem	Matrix: form		TOT	Complement verb: form								
					pres subj	pres amb	pres ind	past subj	past amb	past ind	*should*	*shall*	*may*
strong	mand	pres	ind	1.23	0.39	0.28	-	0.056	-	-	0.50	-	-
			mod	0.56	-	-	-	-	-	-	0.056	-	-
		past	ind	0.39	0.056	-	-	-	-	-	0.33	-	-
			mod	-	-	-	-	-	-	-	-	-	-
		TOTAL		**1.67**	**0.45**	**0.28**	**-**	**0.056**	**-**	**-**	**0.89**	**-**	**-**
weak	mand	pres	ind	2.68	0.28	0.61	-	0.056	-	-	1.67	0.056	-
			mod	0.11	0.056	-	-	-	-	-	0.056	-	-
		past	ind	0.45	-	-	-	-	-	-	0.45	-	-
			mod	0.84	-	-	-	0.22	0.11	0.11	0.39	-	-
		TOTAL		**4.07**	**0.33**	**0.61**	**-**	**0.28**	**0.11**	**0.11**	**2.56**	**0.056**	**-**
	prop	pres	ind	0.22	-	0.11	-	-	-	-	0.11	-	-
			mod	0.056	-	-	-	-	-	-	-	-	0.056
		past	ind	0.056	-	-	-	-	-	-	0.056	-	-
		TOTAL		**0.33**	**-**	**0.11**	**-**	**-**	**-**	**-**	**0.17**	**-**	**0.056**

Table 4.13: The form of the finite verb in *that*-clauses after strong and weak adjectives in EModE (PPCEME 1500–1710), relative frequencies per 100,000 words

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 Tables 4.12 and 4.13). 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).[81] In EModE, only the second (*thou*) and third person singular present forms are distinctive.[82] In addition to (few) inflectional endings, negation distinguishes between the two mood types as well, as indicative finites are negated with *do*-support, while subjunctive finites 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 form *should* as finite. It can be seen in Table 4.12 that the form is found in mandative as well as propositional complements. The earliest example with attitudinal *should* in the adjectival data is given below.

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

[81] In fact, the six instances with a past subjunctive in Table 4.12 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).

[82] Again, *be* has preserved more distinctive forms, viz. 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).

It is clear from the context that the *he*-person in (4.31) has tarried long in one place. The speaker here wonders whether it was meet he actually did so. 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 4.11). We can conclude that the overall tendencies observed with verbal matrices in ME 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, viz. 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. In fact, 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 4.14 below, in which the frequency loss of the subjunctive in mandative clauses is clearly matched by a frequency rise 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 Tables 4.15 and 4.16). 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 been 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;

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**

Table 4.14: The form of finites in mandative clauses with adjectival matrices in EModE (n: absolute frequency; %: relative share)

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, in turn, 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 Tables 4.17 and 4.18).[83] Whereas in LModE, a vast majority of mandative clauses contain a modal finite, in PDE these occur in only 17.25% of the data. In fact, the most frequent types include ambiguous forms (39.95%) and indicative forms (38.83%). Thus, after a steady rise from ME onwards, the periphrastic forms lose frequency in PDE mandative complements to the 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 fact, the finites are most frequently indicative forms (70.25%).

In conclusion, the diachronic corpus study of *that*-clauses found with the adjectives studied in copular SLC/ECs or transitive ECs has shown that the finite form changes in formal type across the various historical periods. More precisely, subjunctive forms, which were the most frequent type in Old English, gradually lose frequency, mostly in favour of periphrastic alternants up to LModE, but also of indicative and ambiguous forms, especially in PDE. The 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

[83] 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 twentieth 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 word war through the development of the mass media.

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,[84] while weak ones pattern with both mandative and propositional complements.[85] 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 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 complements 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 chapter 5 (section 2.4.2), 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.

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[84] In the PDE data of *essential* and *crucial*, the few examples with propositional complements have been left out (see chapter 3, sections 2.4 and 4.4). In chapter 5, section 2.4, 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.

[85] 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.

Type of adj	Comp: sem	Matrix:		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	4	-	1	-	-	-	-	-	3	-	-	-
		past	ind	58	-	-	-	-	-	-	-	58	-	-	-
			mod	5	-	-	-	-	-	-	-	5	-	-	-
		TOTAL		**171**	**5**	**5**	**1**	-	-	**-**	-	**158**	**2**	-	-
weak	mand	pres	ind	135	3	4	1	-	-	-	-	125	1	1	-
			mod	15	2	-	-	-	-	-	-	12	1	-	-
		past	ind	44	-	-	-	-	-	-	1	42	-	-	1
			mod	14	-	-	-	-	1	1	-	12	-	-	-
		TOTAL		**208**	**5**	**4**	**1**	**-**	**1**	**1**	**1**	**191**	**2**	**1**	**1**
	prop	pres	ind	3	-	1	-	1	-	-	-	1	-	-	-
		past	ind	6	-	-	-	-	-	-	1	5	-	-	-
			mod	1	-	-	-	-	-	-	-	1	-	-	-
		TOTAL		**10**	**-**	**1**	**-**	**1**	**-**	**-**	**1**	**7**	**-**	**-**	**-**

Table 4.15: The form of the finite verb in that-clauses after strong and weak adjectives in LModE (CLMETEV 1710–1920), absolute frequencies

Type of adj	Comp: sem	Matrix:		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	0.69	0.033	0.027	0.0067	-	-	-	-	0.61	0.013	-	-
			mod	0.027	-	0.0067	-	-	-	-	-	0.020	-	-	-
		past	ind	0.39	-	-	-	-	-	-	-	0.39	-	-	-
			mod	0.033	-	-	-	-	-	-	-	0.033	-	-	-
		TOTAL		**1.14**	**0.033**	**0.033**	**0.0067**	**-**	**-**	**-**	**-**	**1.055**	**0.013**	**-**	**-**
weak	mand	pres	ind	0.90	0.020	0.027	0.0067	-	-	-	-	0.83	0.0067	0.0067	-
			mod	0.10	0.013	-	-	-	-	-	-	0.080	0.0067	-	-
		past	ind	0.29	-	-	-	-	-	-	0.0067	0.28	-	-	0.0067
			mod	0.094	-	-	-	-	0.0067	0.0067	-	0.080	-	-	-
		TOTAL		**1.39**	**0.033**	**0.027**	**0.0067**	**-**	**0.0067**	**0.0067**	**0.0067**	**1.28**	**0.013**	**0.0067**	**0.0067**
	prop	pres	ind	0.020	-	0.0067	-	0.0067	-	-	-	0.0067	-	-	-
		past	ind	0.04	-	-	-	-	-	-	0.0067	0.033	-	-	-
			mod	0.0067	-	-	-	-	-	-	-	0.0067	-	-	-
		TOTAL		**0.067**	**-**	**0.0067**	**-**	**0.0067**	**-**	**-**	**0.0067**	**0.047**	**-**	**-**	**-**

Table 4.16: The form of the finite verb in that-clauses after strong and weak adjectives in LModE (CLMETEV 1710–1920), relative frequencies per 100,000 words

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	should	have to (*had to*)	could	can	must	will	need to
strong	mand	pres	ind	273	11	113	119	-	1	-	21	-	-	5	3	-	-
			mod	1	-	1	-	-	-	-	-	-	-	-	-	-	-
		past	ind	57	12	-	2	-	25	-	16	*1*	-	-	-	-	1
			mod	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		TOTAL		**331**	**23**	**114**	**121**	**-**	**26**	**-**	**37**	***1***	**-**	**5**	**3**	**-**	**1**
weak	mand	pres	ind	420	3	205	147	1	-	-	59	1	2	2	-	-	-
			mod	2	-	2	-	-	-	-	-	-	-	-	-	-	-
		past	ind	52	6	1	-	-	18	-	26	-	-	-	1	-	-
			mod	1	-	-	-	-	-	-	-	-	1	-	-	-	-
		TOTAL		**475**	**9**	**208**	**147**	**1**	**18**	**-**	**85**	**1**	**3**	**2**	**1**	**-**	**-**
	prop	pres	ind	104	-	12	44	19	16	-	9	-	-	3	-	1	-
			mod	2	-	-	-	1	-	-	-	-	-	-	-	1	-
		past	ind	50	-	1	-	-	28	1	17	*1*	2	-	-	-	-
			mod	2	-	-	2	-	-	-	-	-	-	-	-	-	-
		TOTAL		**158**	**-**	**13**	**46**	**20**	**44**	**1**	**26**	**1**	**2**	**3**	**-**	**2**	**-**

Table 4.17: The form of the finite verb in that-clauses after strong and weak adjectives in CB, absolute frequencies

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	should	have to (*had to*)	could	can	must	will	need to
strong	mand	pres	ind	0.65	0.026	0.27	0.28	-	0.0024	-	0.050	-	-	0.012	0.0071	-	-
			mod	0.0024	-	0.0024	-	-	-	-	-	-	-	-	-	-	-
		past	ind	0.14	0.029	-	0.0048	-	0.059	-	0.038	0.0024	-	-	-	-	0.0024
			mod	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		TOTAL		**0.79**	**0.055**	**0.27**	**0.29**	**-**	**0.062**	**-**	**0.088**	**0.0024**	**-**	**0.012**	**0.0071**	**-**	**0.0024**
weak	mand	pres	ind	1.00	0.0071	0.49	0.35	0.0024	-	-	0.14	0.0024	0.0048	0.0048	-	-	-
			mod	0.0048	-	0.0048	-	-	-	-	-	-	-	-	-	-	-
		past	ind	0.12	0.014	0.0024	-	-	0.043	-	0.062	-	-	-	0.0024	-	-
			mod	0.0024	-	-	-	-	-	-	-	-	0.0024	-	-	-	-
		TOTAL		**1.13**	**0.021**	**0.49**	**0.35**	**0.0024**	**0.043**	**-**	**0.20**	**0.0024**	**0.0071**	**0.0048**	**0.0024**	**-**	**-**
	prop	pres	ind	0.25	-	0.029	0.10	0.045	0.038	-	0.021	-	-	0.0071	-	0.0024	-
			mod	0.0048	-	-	-	0.0024	-	-	-	-	-	-	-	0.0024	-
		past	ind	0.12	-	0.0024	-	-	0.067	0.0024	0.040	0.0024	0.0048	-	-	-	-
			mod	0.0048	-	-	0.0048	-	-	-	-	-	-	-	-	-	-
		TOTAL		**0.38**	**-**	**0.031**	**0.11**	**0.048**	**0.10**	**0.0024**	**0.062**	**0.0024**	**0.0048**	**0.0071**	**-**	**0.0048**	**-**

Table 4.18: The form of the finite verb in that-clauses after strong and weak adjectives in CB, relative frequencies per 100,000 words

2.2 *To-clauses*

In this section, I will discuss the type of clausal complement that is most common with most of the adjectives studied in Present-day English, viz. the *to*-clause. Again, I will first describe the origin of the complement in section 2.2.1. In section 2.2.2, I will distinguish three major types of construction with the infinitive and the adjectives studied here, and I will describe their diachronic development and distribution.

2.2.1 *The origin of the* to*-clause*

It is generally agreed that the *to*-infinitive clause originates in a PP with the allative preposition *to* and a dative-inflected verbal noun (e.g., Jolly 1873: 150–154; Delbrück 1967 [1893–1900]: i 50, ii 451 ; Callaway 1913: 1–2; Wright and Wright 1925 [1908]: 260; Jespersen 1974 [1927]: 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 (1871 [1833–1852]: iii §849–886). His analysis has gained general acceptance, but scholars disagree on whether the bare infinitive, ending in *–an*[86] in Old English has the same **etymology** as the inflected infinitive preceded by *to* and ending in *–anne*.[87] Wright and Wright (1925 [1908]: 260) argue that the *to*-infinitive derives from the bare infinitive. In particular, 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*" (1925 [1908]: 260). Many influential authors adopted this view, such as Callaway (1913), Jespersen (1974 [1927]: 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 1967 [1870–1898]: 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 (4.32) below.

[86] Apart from *-an*, variants are attested in Old English, such as *-on*, *-un*, *-en* and Northumbrian *-a* (Callaway 1913: 2)
[87] Also for *-anne*, other endings are attested in Old English, such as *-enne*, *-onne*, *-ane* and *-ene* (Callaway 1913: 2)

(4.32) to berenne
to (preposition) + *ber-* (verb stem) + –**anja*– (derivational suffix) + –**i* (dat sg inflection)
Primitive/Common Germanic: *to beranjōi

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 OE** already.[88] 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 (4.32) 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.[89] 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). In fact, Los (2005: ch. 2–3) shows that in Old English the distribution of the *to*-infinitive originally followed that of the purposive *to*-PP, occurring in

[88] Los's evidence against a PP-analysis comes from the occurrence of *to*-infinitives in conjoined structures, the strict adjacency of *to* and infinitive, the fossilized nature of the dativa l 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) (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, and the similarity of object position in *to*-clauses and subjunctive *that*-clauses, whose distribution the *to*-infinitive started to follow (2005: 171–175).

[89] 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 than a purposive adjunct expressing consecutivity. This category change can only be explained by the verbs of motion and rest changing category themselves, viz. 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, viz. the *to*-infinitive (Los 2005: 40).

three environments: (i) as purpose adjunct to a verb phrase (VP), (ii) as purpose adjunct[90] 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.

2.2.2 The types of to*-clauses with adjectives and their development*

In this section, I will discuss the infinitival constructions found with the adjectives studied here. In section 2.2.2.1, I will distinguish three major types of construction that are found from Old English onwards, and I will discuss their diachronic development and distribution. In section 2.2.2.2, I will concentrate on the development of the whole of *to* and the infinitival form, referring to insights from grammaticalization studies.

2.2.2.1 Three types of *to*-infinitival constructions with adjectives

In this section I will distinguish three types of *to*-infinitival constructions found with the adjectives studied here. More generally, I will also relate these types to the diachronic distribution of the *to*-infinitive. In this respect, it will prove useful to compare the adjectival data to Los's (2005) findings on verbal complementation with the *to*-infinitive. Finally, I will present the relative frequency of the infinitival constructions with adjectives troughout the history of English, and discuss their development. The three types of *to*-infinitival constructions distinguished here are:

(4.33) 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)

(4.34) type (ii): the subjectless/extraposed construction (SLC/EC)
(non-referential subject (*it*)) + copula/V + ADJ + *to*-clause
Forþon hit is **god** godne to herianne & yfelne to leanne
Therefore it is good good.things to praise and evil.things to reproach
'Therefore, it is good to praise good things and to reproach evil things' (YCOE 1050–1099 BedePref 2.10)

[90] 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 (e.g., 2005: 164, 171).

(4.35) type (iii): the extraposed – post-predicate construction (EC-POPC)
(non-referential subject (*it*)) + copula/V + ADJ + *to*-clause with non-subject gap
Angiennað ðonne [...] smeagean suiðor ðonne him **ðearf** sie
begin.PRES.IND then reflect.INF more than to.them necessary be.PRES.SUBJ
to begonganne
to engage.in
'Then they begin to [...] reflect more than it is necessary for them to engage in' (YCOE 890–899 CP 11.67.3)

In constructions of type (ii) and (iii), the *to*-infinitive competes with the *that*-clause discussed above (section 2.1.2). 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 validity of the conceptual map, as strong adjectives are found with mandative clauses only, whereas weak ones combine with both semantic types.

The first construction discussed here is the **post-predicate construction** (POPC) (cf. Biber et al. 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; Visser 1972: §940; Mitchell 1985: §928–931; Traugott 1992: 249). In fact, in this type the *to*-infinitive functions as complement of the adjective itself (e.g. *good* in (4.33)), whereas in types (ii) and (iii), it functions as complement of the matrix clause (e.g. *be good* in (4.34), and *be necessary* in (4.35)). Examples of the POPC are given in (4.36) and (4.38). In (4.37) and (4.39), comparable examples with purposive *to*-PPs are given.

(4.36) Cuþ ys eac þæt his hyd is **bryce** hundum & eallum fiþerfetum
known is also that his skin is useful (on.)dogsand (on.)all (on.)quadruped
nytenum wið woles gewinne on to donne.
(on.)animals againstof.pestilence hardship on to do
'It is also known that its skin [i.e. of a badger, AVL] is useful to put on dogs and all quadruped animals against the hardship of pestilence' (YCOE 1000–1050 Med 1.1 (de Vriend) 1.8)

(4.37) Swiþost he for ðider, toeacan þæs landes sceawunge, for þæm
Especially he went thither, besides of.the of.land seeing, for the
horshwælum, for ðæm hie habbað swiþe æþele ban on hiora toþum þa teð
walruses, because they have very costly bone in their teeth the teeth
hie brohton sumeþæm cyninge, & hiora hyd bið swiðe **god** to sciprapum.
they brought someto.the to.king, 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)

(4.38) Broðor þa leofestan, iccyðe þæt þreo þing synt ærest on foreweardum
Brothers the dearest, I proclaim that three things are first in agreements
æghwylcum men **nydbehefe** to habbanne. I isgeleafa, oðer is hiht,
to.each to.man necessary to have. One isbelief, other ishope,
þridde soðlufu.
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)

(4.39) ond þurh heo sende gemænelice þa þing all, þa ðe to
and through them sent commonly the things all, that.REL.PRON PRT to
cirican bigonge & þegnunge **nedþearflecu** wæron, huslfatu
of.church (to.)practice and (to.)ministry necessary be.PAST.IND, sacramental-vessel
& wigbedhrægl & circan frætwednes & biscopgegyrlan & diacongegyrlan
and altar.cover and of.chirch decoration and episcopal.robes and deacon's.robes
'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, deacon's robes' (YCOE 1050–1099 Bede 1 16.88.31)

In the first two examples, the skin of an animal is said to be useful or good for a specific purpose. In (4.36), the purpose is expressed by a to-infinitive (*on to donne*), whereas in (4.37), it is expressed by a *to*-PP (*to sciprapum*). It can be argued, however, that 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'. In the last two examples, 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 (4.39) 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 chuch. For the *to*-infinitive in (4.38), however, a true purposive reading is less suitable. It should also be noted that the things in (4.38) are not concrete tangible objects like in (4.39), but rather abstract nouns with a verbal flavour. In any case, in the remainder of this section I will use the label POPC to refer to both (4.36) and (4.38). In the next chapter, I will focus on the distinction between these two examples and sketch the history of the POPC, or more generally, the post-adjectival *to*-infinitive construction (see chapter 5, section 1). From the discussion above, we can conclude that at least some Old English *to*-infinitival constructions with the adjectives studied here could use a purposive *to*-PP as an alternative expression.

Apart from the *to*-PP and *to*-infinitive, there is another expression that could occur in the three purposive environments mentioned above (see section 2.2.1), viz. the

subjunctive *that*-clause.[91] More specifically, the purposive function must have been its original use (also in Gothic, cf. Los (2005: 30)) (cf. section 2.1.2). Los (2005: 172 (39 a–c)) also gives examples of an adjective occurring with the three types of purposive expression, viz. *gearu* ('ready'). The examples with the *to*-infinitive and the *that*-clause are repeated below.

(4.40) ic beosona **gearu** to adreoganne þæt ðu [...] deman wille
I am at.oncereadyto bear what you [...] decide will
'I am now ready to bear what you will decide' (And 70, cited in Los 2005: 172 (39c))

(4.41) ic eom sona **gearo** þæt icgange to minum discipulum
I am at.oncereadythat icgo[.PRES.]SUBJ to my disciples
'I am now ready to go to my disciples' (LS 1.1 (Andrew Bright) 306, cited in Los 2005: 172 (39b))

However, the *to*-infinitive construction in (4.40) differs from that with, for example, *bryce* in (4.36) above in that the syntactic subject of the clause (i.e. *ic*) is coreferential with the notional subject of the *to*-infinitive, whereas in (4.36) the syntactic subject (i.e. *his hyd*) is coreferential with the notional object of the *to*-infinitive. In other words, the *to*-infinitive in (4.40) has a subject gap, while that in (4.36) has a non-subject gap. In the literature, constructions like (4.40) are termed '*eager*-constructions', whereas constructions like (4.36) are termed '*easy*-constructions' or '*tough*-constructions' (cf. Fischer 1991; Fischer et al. 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 gereordianna*, '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 subjunctive *that*-clause construction comparable to that in (4.41) either.[92] Therefore, I conclude that – unlike *gearu*-type adjectives, conative verbs, and verbs of

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[91] With the term 'subjunctive *that*-clauses' Los refers 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) (Los 2005: 24).

[92] The *that*-clauses thought of here 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 (see examples below). In fact, result clauses usually have an indicative, rather than a subjunctive finite (Traugott 1992: 251) (the examples have a modal finite).

(ii) Hwæðer þu wene þæt ænig þing on þisse worulde swa **good**
whether youthink.PRES.SUBJ that any thing on this world so good
sie þæt hit ðe mæge <forgifan> fulla gesælða?
be.PRES.SUBJ that it to.you may.PRES.SUBJ 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)

(iii) gif he bið swa **dysig** & swa **ungewiss** þæt he þæt witan ne mæg
if he is so foolish and so ignorant that he that know.INF not be.able.PRES.IND
'If he is so foolish and ignorant that he cannot know that' (YCOE 940–960 Bo 11.26.2)

persuading and urging – the adjectives studied here did not occur with purposive subjunctive *that*-clauses. Rather, they were complemented by either *to*-PPs or *to*-infinitives.

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 OE period it had already spread to various other environments (cf. Mitchell (1985: §2033), see section 2.1.2 above), 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 SLC discussed above. Importantly, Los (2005: ch. 4–6) shows that in OE the subjunctive *that*-clause sets the example for the *to*-infinitive, in that the *to*-infinitive's distribution exceeds that of the purposive *to*-PP, and starts following the distribution of the subjunctive *that*-clause. This is how the *to*-infinitive begins to occur as Theme-argument of intention verbs other than the conative verbs, verbs of commanding and permitting, and some types of commissives (Los 2005: ch. 4–6). Specifically after conative verbs, Los (2005: 99) argues, the *to*-infinitive has been reanalysed from purposive adjunct to Goal-argument, and hence it has become functionally equivalent to the subjunctive *that*-clause. Afterwards, the *to*-infinitive may have spread to other intention verbs through reanalysis[93] 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 may have extended to verbs of commanding and permitting (Los 2005: 137), and some types of commissives (Los 2005: 140–146).

With regard to the adjectival constructions studied here, the changing distribution of the *to*-infinitive explains its occurrence in the second construction to be discussed here: the **subjectless construction**, which later develops into the **extraposed construction** (SLC/EC) (i.e., type (ii) presented above) (cf. Mitchell 1985: §1537–1542, 1544–1547; Visser 1972: §903, 908; Traugott 1992: 244) (In Callaway's (1913: 7) view, the *to*-infinitive functions as subject (see section 1.1 above)). An example is given below.

(4.42) Gif **god** is and halwendlic to forhæbbenne fram unalyfedlicum styrungum and
if good is and salutary to refrain from unlawful disturbances and
for ði hæfð ælc cristen sawul mædenes naman, Hwisind ðonne þa fif
therefore has each Christian soul of.virgin name, why are then the five
underfangene, and þa fif aworpene
accepted, 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)

[93] More specifically, Bock (1931) proposes that *to*-infinitival adjuncts after nominal objects were reanalysed as Theme-argument of the verb (Los 2005: 99).

Unlike the POPC examples in (4.36) and (4.38) above, this example has no referential subject in the nominative case, or a surface subject such as (*h*)*it* (see section 1.1 above 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 (4.34) of type (ii) given above, the *to*-infinitives have their objects preceding them). The only similarity between the POPC and the SLC/EC relates to the interpretation of the notional subject of the *to*-infinitive: in both cases it should be inferred from the context, or, in other words, its interpretation in determined non-syntactically (Huddleston and Pullum 2002: 1193). It is important to note that in the SLC/EC the *to*-infinitive is in competition with the subjunctive *that*-clause (see section 2.1.2 above), but no longer with the *to*-PP. We therefore have to conclude that with adjectives – unlike with verbal matrices – we can hardly posit a developmental relation between the purposive function of the *to*-infinitive (in POPC) and its function as Theme-argument (in SLC/EC), as in these functions it never competed with the same types of expression. (With verbs, the subjunctive *that*-clause with the conative verbs and verbs of persuading and urging formed the middle ground.)[94] Hence, we are led to assume that in the distribution of the *to*-infinitive with adjectival predicates, at some stage analogy with verbal matrices has played a role.

The distribution of the *to*-infinitive and the expressions it competes with have been represented in Figure 4.2 below. 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, reflecting our conclusion that we cannot be sure about a developmental relation between the POPC and the SLC/EC.

The third *to*-infinitival construction introduced above is the **extraposed – post-predicate** construction (EC-POPC, type (iii)). Its name reflects its hybrid nature. Semantically, the *to*-infinitive functions as Theme rather than as purposive adjunct, as in the SLC/EC treated above. However, this type also bears resemblance to the POPC, in that the *to*-infinitive has a non-subject gap, with its notional (prepositional) object preceding the adjectival matrix. Like the POPC, this third type thus excludes intransitive verbs as well. In fact, it is typically used in subclauses, viz. relative clauses (see (4.43) and comparative clauses (see (4.44)), in which the notional objects or prepositional objects of the *to*-infinitive occur in the main clause, preceding the whole of adjectival matrix and *to*-infinitive occurring in the subclause.

[94] It should be noted that the adjectives that occurred with purposive subjunctive *that*-clauses (viz. of the *gearu*-type) did not develop the SLC/EC construction (cf. PDE **It is **eager** to prepare dinner*).

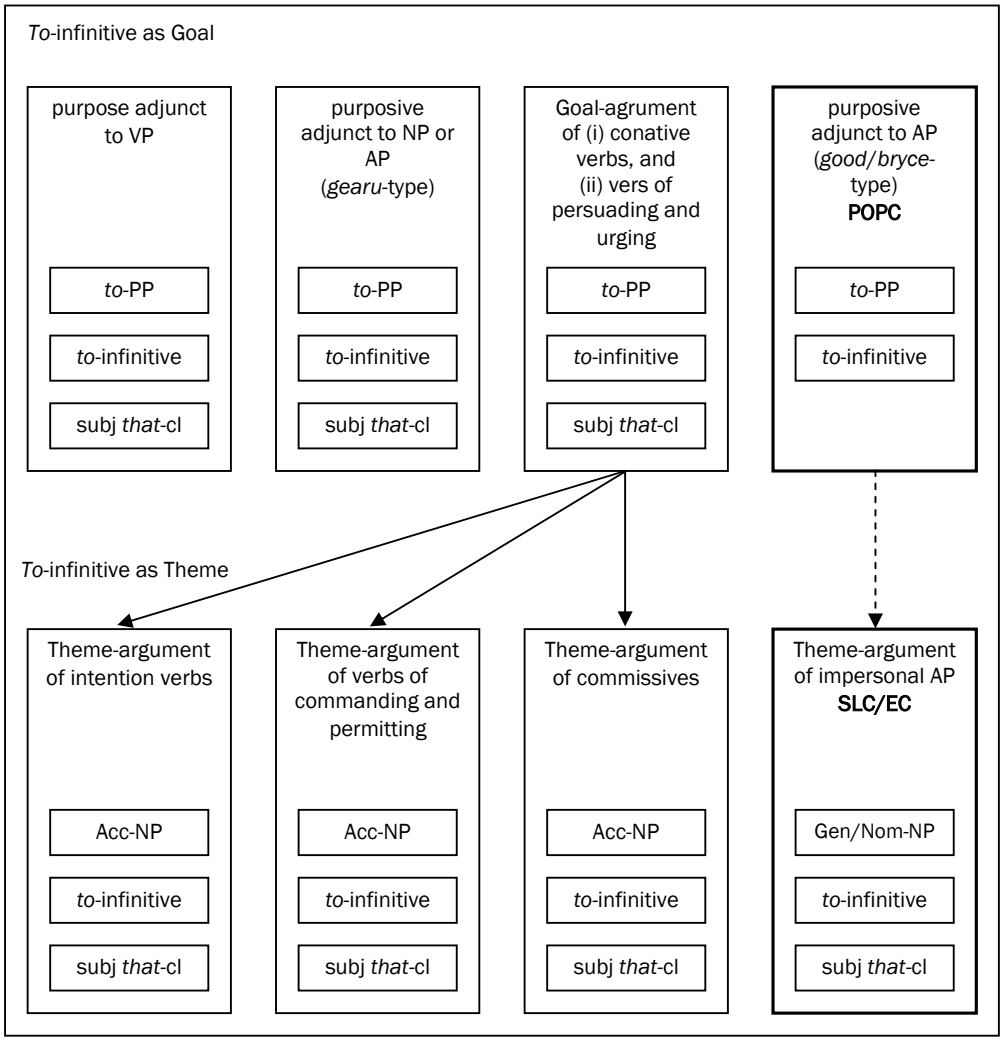

Figure 4.2: The distribution of the to-infinitive and its competitors in its development from expression of Goal to Theme-argument

(4.43) Sie se lariow gemetfæsð & gescadwis & nyttwyrðe on his wordum,
be.PRES.SUBJ the teacher moderate and intelligent and useful in his words
ðætte he ne suigige ðæs ðe **nyttwyrðe** sie to
that he neither be.silent.PRES.SUBJ of.that PRT(REL) useful be.PRES.SUBJ to
sprecanne,ne ðæt ne sprece ðæt he suigigean scyle.
say, nor that not say.PRES.SUBJ what he be.silent.INF shall.PRES.SUBJ
'The teacher should be moderate, intelligent, and useful in his words, so that neither does he remain silent about the things which it is useful to say, nor does he say the things which he should be silent about' (YCOE 890–899 CP 15.89.5)

(4.44) Angiennað ðonne oftrædlice mare secgean & smeagean suiðor ðonne him
begin.PRES.IND then frequently more say.INF and reflect.INF more than to.them
ðearf sie to begonganne
necessary be.PRES.SUBJ to engage.in
'Then they begin to speak more frequently and reflect more than it is necessary for them to engage in' (YCOE 890–899 CP 11.67.3)

In (4.43), the notional object of *to sprecanne* is the antecedent of the relative clause introduced by *ðe*. In (4.44), the notional object of *to begonganne* is the actions designated by the bare infinitives after *angiennað* (*oftrædlice mare secgean & smeagean suiðor*). The hybrid nature of the EC-POPC has also been noted by Callaway (1913: 9–10). He states that the *to*-infinitive occurs much more frequently as the subject of an adjectival matrix (i.e., *beon* or *ðyncan* plus adjective) than of verbs like *behofian* ('behove') or *gelystan* ('please') (the *to*-infinitives he has in mind are analysed here as Theme-arguments of a SLC rather than as subjects). However, he goes on to list a few cases in which the *to*-infinitive may function as a modifier of the adjective (cf. POPC) rather than as subject of the copula plus adjective (cf. SLC/EC). In his view, clauses introduced by the demonstrative pronouns *ðæt* or *ðis*, neuter nouns or *hwæt*[95] are very doubtful. Clauses introduced by a relative pronoun (*ðæt* or *ðe*), like in (4.43) above, seem less doubtful to him. In fact, later examples, such as (4.45) below, show that syntactically the EC-POPC is a type of EC with anticipatory *it*, occurring in specific syntactic environments.[96]

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[95] With regard to clauses introduced by *hwæt*, Callaway's (1913: 9) intuition seems justified, as in later data we find them in both POPCs and SLC/ECs, cf. examples (iv) and (v) respectively. The Old and Middle English data do not include clauses introduced by *hwæt*.

(iv) but as to a publique declaration, they being so few, desired that his majestie would call the rest of their brethren & peeres, that they might consult what was **fit** to do on this occasion, not thinking it convenient to publish any thing without them (PPCEME 1688-1689 Evelyn, *Diaries*)

(v) As it was a few years after his marriage that he was promoted to the rank of lieutenant-colonel, in which he continued till he had a regiment of his own, I shall, for the future, speak of him by that title; and I may not, perhaps, find any more proper place in which to mention what it is **proper** for me to say of his behaviour and conduct as an officer. (CLMETEV *c*1750 Doddridge, *The life of Col. James Gardiner*)

[96] This is why EC-POPCs are included as *to*-clauses in Table 4.1 (section 1.1) and Table 4.2 (section 1.2) above.

(4.45) The new ornaments which it was **necessary** to introduce between the vacancies of ancient sculpture are executed in the rudest and most unskillful manner. (CLMETEV 1776 Gibbon, *The decline and fall of the Roman Empire* (Vol. 1))

In this EC example, the notional object of *to introduce* is the antecedent of the relative clause it occurs in, as in the SLC example (4.43) above (viz. *the new ornament*s). We can thus conclude that data from a later stage of English show that the clauses introduced by relative pronouns are less doubtful indeed.

However, the Old English data also include what Callaway (1913: 9) has called "especially doubtful" cases, viz. clauses introduced by demonstrative *ðæt*. More specifically, they present us with another hybrid type of complementation, viz. a **combined pattern**. One of the three examples found in Old English is given below.

(4.46) Hwæt la, þæt is ofer eal **gemet** to sceawigenne & to smægenne, þæt þa
oh, that is over all suitable to behold and to reflect.on, that the
earman fyrenfullan sculon sarige aswæman fram ansyne ures drihtnes
poor sunful shall.PRES.IND sorrowfully grieve.INF from face of.our of.lord
& fram his haligra & fram þam wuldre heofona rices
and from his holiness and from the glory of.heavens of.kingdom
'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)

In this example, 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 (4.36) above, it does not refer to an extra-linguistic entity (cf. skin in (4.36), but it cataphorically refers to the *that*-clause that follows the *to*-infinitives (see section 2.1.1). In fact, the anticipatory demonstrative *þæt* and the *that*-clause itself both function as the notional object of the *to*-infinitives. Therefore, this construction can be thought of as the precursor of the combined EC, an example of which is given below.

(4.47) 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 this example, 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.[97]

So far, I have presented three types of *to*-infinitival constructions with the adjectives studied here, viz. the POPC, SLC/EC and EC-POPC, and I have related these to the diachronic distribution of the *to*-infinitive as described by Los (2005). In the remainder of this section, I will present the results of my diachronic corpus study, and I will discuss the **absolute and relative frequencies** of the three types of infinitival construction distinguished above. The data of the SLC/EC and EC-POPC include both copular and transitive verb constructions (see sections 1.1 and 1.2 above). In Table 4.19, I present the absolute and relative frequencies of the constructions with both strong and weak adjectives. In Table 4.20, I present the normalized frequencies per 100,000 words. Again, these figures have been rounded to two decimal places, or at least two significant digits. The tables distinguish between mandative and propositional *to*-clauses. However, as in the case of the finite complements (see section 2.1.2 above), no distinction is made between *to*-clauses in dynamic or deontic expressions, as these are not formally different. It should be noted that Tables 4.19 and 4.20 also include a more specific type of *to*-clause, viz. *for…to*-infinitives, which are found across the same three types of construction (viz. POPC, SLC/EC and EC-POPC) and the same semantic complement types (viz. 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 2.3 below).[98] Finally, for the PDE data, no POPCs have been recorded here, as the type has become rather marginal (see chapter 5, section 1.3.2.3). Instead of using a general query to search the CB, I designed sufficiently specific queries, retrieving only ECs and EC-POPCs.

In general, it can be seen in Table 4.19 that the relative shares of the three infinitival constructions change through time. The share of the POPC, for instance, 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 4.20). From the case-study presented in the next chapter (see chapter 5, section 1), it will become clear that in PDE the POPC is not frequent either. Table 4.19 also shows that the POPC loses frequency in favour of the SLC/EC, which came into the language later, as discussed above. Its relative share increases from 25% in EOE to 98.73% in PDE. In particular, from the normalized frequencies in Table 4.20 it can be inferred that the SCL/EC gained in frequency especially from EOE to EModE, but that afterwards it remained relatively stable. Finally, the relative share of the EC-POPC decreases from EOE (30%) to LME, after which it hovers around 5.95% up to LModE. In PDE, this construction accounts for only 1.27% of the data.

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[97] Likewise, these three examples with a combined pattern are not included in Table 4.1 (section 1.1) and Table 4.2 (section 1.2) above.

[98] 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).

In order to illustrate the diachronic validity of the conceptual map, Tables 4.19 and 4.20 include the distinction between mandative and propositional complements, much like Tables 4.3 to 4.10, 4.12, 4.13 and 4.15 to 4.18 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.

(4.48) Þa cwæð Petrus to him, Drihten, **god** ys us her to beonne;
Then said Petrus to him, Lord, good is to.us here to be;
Gyf þu wylt uton wyrcean her þreo eardungstowa
If you want.PRES.IND go.PRES.SUBJ.PL make.INF 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, viz. 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 4.19 and 4.20, 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 chapter 5, sections 2.2.2.1 and 2.4, and chapter 6, section 1.2.

If we focus on the mandative complements only, however, the data do not differ so much for weak and strong adjectives. In Tables 4.21 and 4.22, 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 in turn more frequent in EC-POPCs. 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, (4.36). I will return to this issue in the next chapter, in which I present a more detailed study of the post-adjectival *to*-infinitive.

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	0.00
		SLC/EC	2	10.00	0	-	0	0.00	15	21.74	51	19.17	741	44.85	711	32.33
		EC-POPC	3	15.00	1	6.25	0	0.00	1	1.45	1	0.38	35	2.12	7	0.32
		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	-
		SLC/EC	3	15.00	1	6.25	8	44.44	32	46.38	134	50.38	630	38.14	1301	59.16
		EC-POPC	3	15.00	0	-	2	11.11	2	2.90	14	5.26	95	5.75	21	0.95
		total	**13**	65.00	**8**	**50.00**	**14**	**77.78**	**46**	**66.67**	**194**	**72.93**	**814**	**49.27**	**1322**	**60.12**
	prop	SLC/EC	0	**-**	3	18.75	1	5.56	1	1.45	0	0.00	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	-
		SLC/EC	5	25.00	4	25.00	9	50.00	48	69.57	185	69.55	1393	84.32	2171	98.73
		EC-POPC	6	30.00	1	6.25	2	11.11	3	4.35	15	5.64	130	7.87	28	1.27
		total	**20**	**100**	**16**	**100**	**18**	**100**	**69**	**100**	**266**	**100**	**1652**	**100**	**2199**	**100**

Table 4.19: 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	0.66	0.35	0.85	0.75	1.11	0.27	0.00
		SLC/EC	0.66	0.00	0.00	1.87	2.84	4.95	1.69
		EC-POPC	0.99	0.088	0.00	0.12	0.056	0.23	0.017
		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
		SLC/EC	0.99	0.088	2.27	3.98	7.47	4.21	3.09
		EC-POPC	0.99	0.00	0.57	0.25	0.78	0.63	0.05
		total	**4.28**	**0.71**	**3.98**	**5.72**	**10.81**	**5.44**	**3.14**
	prop	SLC/EC	0	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	0.00
		SLC/EC	1.65	0.35	2.56	5.97	10.31	9.30	5.16
		EC-POPC	1.98	0.088	0.57	0.37	0.84	0.87	0.067
		total	**6.58**	**1.41**	**5.11**	**8.58**	**14.83**	**11.03**	**5.22**

Table 4.20: The development of 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	2	28.57	4	80.00	3	100	6	28.57	20	28.17	40	4.90	0	-
	SLC/EC	2	28.57	-	-	-	-	15	71.43	51	71.83	741	90.81	711	99.03
	EC-POPC	3	42.86	1	20.00	-	-	-	-	-	-	35	4.29	7	0.97
	total	**7**	**100**	**5**	**100**	**3**	**100**	**21**	**100**	**71**	**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	-
	SLC/EC	3	23.08	1	12.50	8	57.14	32	69.57	134	69.07	630	77.40	1301	98.41
	EC-POPC	3	23.08	-	-	2	14.29	2	4.35	14	7.22	95	11.67	21	1.59
	total	**13**	**100**	**8**	**100**	**14**	**100**	**46**	**100**	**194**	**100**	**814**	**100**	**1322**	**100**

Table 4.21: 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	0.66	0.35	0.85	0.75	1.11	0.27	-
	SLC/EC	0.66	-	-	1.87	2.84	4.95	1.69
	EC-POPC	0.99	0.088	-	0.12	0.056	0.23	0.017
	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	-
	SLC/EC	0.99	0.088	2.27	3.98	7.47	4.21	2.99
	EC-POPC	0.99	-	0.57	0.25	0.78	0.63	0.026
	total	**4.28**	**0.71**	**3.98**	**5.72**	**10.81**	**5.44**	**3.02**

Table: 4.22: The development of mandative to-infinitival constructions with strong and weak adjectives (relative frequencies per 100,000 words)

2.2.2.2 The development of '*to* + infinitive'

The previous section concentrated on the types of construction the *to*-infinitive is found in with the adjectives studied, regardless of the relation between the form *to* and the infinitival form, or the formal properties of the infinitive. The present section concentrates on these last aspects of the development of the *to*-infinitive, drawing on insights from grammaticalization studies, and it discusses how the *to*-infinitive developed the properties it has in Present-day English.

Up to the Early Middle English period, the development of the form *to* accompanying the infinitival form has been regarded 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* is the only preposition that can be used with the inflected infinitive,[99] and it clearly forms a unit with the infinitive (see section 2.2.1, note 29). It thus has '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* becomes 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 SLC/EC in (4.49) below. Apart from *te*, spelling variant *t'* is also attested (Fischer 2003: 452).[100]

(4.49) Wa ȝeu ðe seggeð ðat it is **god** te biȝeten michel eihte,
woe to.you PRT(REL) says that it is good to get much property
ðe ne mai bien biȝeten wið-uten unrihtwisnesse!
PRT(REL) not may.PRES.IND/SUBJ be.INF gotten without unrighteousness
'Woe is you that say that it is good to get much property, which cannot be gotten without unrighteousness!' (PPCME *a*1225 (c1200) Vices & V. (1) (Stw 34) 79)

The semantic reduction of *to* involves a weakening of its purposive meaning. This weakening is evident from the changing distribution of the *to*-infinitive in Old English, as discussed above. Moreover, in Middle English the *to*-infinitive is occasionally found after

[99] However, in Middle English the inflected infinitive is also used after the prepositions *æt* and *till*. These forms are Scandinavian loans and they are restricted to the Northern dialects. In any case, in these dialects the form *to* is in variation with *æt* and *till* (Mustanoja 1960: 515; Fischer 2003: 452).

[100] The fact that there are no *te*-spellings in Old English, however, 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* begun in Old English already.

verbs of motion and posture, with which the bare infinitive is the rule in Old English. Importantly, the expressions with verbs of posture involve simultaneity rather than consecutivity (cf. Fischer 2000: 156; see section 2.2.1, note 30). 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.

(4.50) Butthe children of Israelputten þerejune a tree & anon the water
Butthe children of Israelput therein a tree and immediately the water
Was swete & **gode** for to drynke.
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 ?*a*1425 (c1400) Mandev.(1) (Tit C.16) 37)

This example, similar to (4.36) above, expresses for which purpose the water is good, viz. 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).[101] 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 fact, the *forto*-infinitive is also found in the SLC/EC studied here, as in example (4.51) below.

(4.51) Þerfore it is **good** þanne for to stynte fro multitude of wordis,
thereforeit is good then for to abstainfrom multitude of words,
and þinkeoonli inþin herte as esily as þou maist.
and think only inyour heart as easily as you may.PRES.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 *a*1450 (*a*1396) 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 (4.42) 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

[101] 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 thus confirm that *to* does not function as a preposition anymore, but rather as an infinitival marker.

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).

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 has been reversed to a certain extent, i.e., that *to* has **degrammaticalized**. More specifically, the emergence of split infinitives and second conjuncts without *to* in sequences of coordinated *to*-infinitives (see example (4.52) below) (Los 2005: 211–215), as well as the loss of the *to*-infinitive after prepositions like *for*, *with* or *of* (see note 42) show that the form *to* has changed from a clitic into a free word, and that its 'scope' (in the sense of Lehmann 1985) has increased rather than decreased (Fischer 2000, 2003; Los 2005: 227–229). Consequently, *to* also shows a decrease in bondedness with the infinitive. Furthermore, Fischer (1997: 155; 2003: 459) argues that the loss of *for* – which was introduced to reinforce *to*'s original purposive meaning – indicates that *to* has 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 is used in the same non-purposive environments in Old and Middle English also goes against a resemanticization 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 becomes slightly more nominal in character, as it begins to occur in sentence-initial subject position, just like the subjunctive *that*-clause (Fischer 2003: 457; Los 2005: 173). However, it is soon replaced by the gerund in this position, which enables the *to*-infinitive to develop a more verbal status again. In fact, the appearance of a few **new structures** in ME indicates that the *to*-infinitive acquires 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),[102] as in *we believe her to be honest*, in which the *to*-clause is not controlled by matrix elements (Mustanoja 1960: 526–527; Miller 2002: ch. 7). Of these new structures, this study will focus on the passive *to*-infinitive and the perfective infinitive in the next chapter (see chapter 5, sections 1.3.1 and 2.2.2.1 respectively).

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

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 (4.49) to (4.51) 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.

(4.52) **Gode** it is to shryue to our Lord, and he*ȝ*estlich singe to þy name
good it is to confess to our Lord, and most.solemnly sing to your name
'It is good to confess to our lord and to sing most solemnly/highly/loudly 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 ME. Since in ME the distribution of the two infinitives had become rather clear, the omission of *to* before the second conjunct of coordinated *to*-infinitives, as in (4.52) above, did not lead to ambiguity, and this situation has not altered up to PDE (cf. Los 2005: 214).

2.2.2.3 Conclusion

The discussion above has shown that the adjectives studied here occur in three types of *to*-infinitival constructions throughout the history of English, viz. POPCs, SLC/ECs and EC-POPCs. 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 SLC/EC, in which the *to*-infinitive functions as Theme, emerged later than the POPC, but it is attested in the Old English data already. In the following periods, its relative share increases rapidly, and in PDE it clearly predominates. The EC-POPC, finally, was argued to be a special type of SLC/EC, which serves well in relative and comparative clauses. It is rather frequent in EOE, but afterwards it becomes a minor option. As in both the SLC/EC and EC-POPC the *to*-infinitive functions as Theme-argument, it is in these constructions that it is in competition with the (subjunctive) *that*-clause. In section 2.3 below, it will be shown that the *to*-infinitive gains in frequency as Theme-argument at the expense of the *that*-clause during the ME period.

In addition, this section has discussed the development of the *to*-infinitive from the perspective of grammaticalization. It has 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.

Finally, the data on the *to*-infinitives in SLC/ECs (and EC-POPCs) have also illustrated the diachronic validity of the conceptual map. 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 2.1.2 above. 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 2.1.2, 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 the next chapter (chapter 5, section 2.4.2).

2.3 The distribution of that*-clauses and* to*-clauses*

Now that the origin and development of the formal types of complement have been discussed (see sections 2.1 and 2.2), 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 SLC/EC with both copular and transitive verbs.[103] 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, viz. mandative clause, bear out that the *to*-clause supersedes the *that*-clause from Early Middle English onwards, as has been observed for verbal matrices 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 SLC/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 (4.48) in section 2.2.2.1 above, and is repeated here in (4.53). The *that*-clause construction in Mark's texts is given in (4.54).

(4.53) Þa cwæð Petrus to him, Drihten, **god** ys us her to beonne;
Then said Petrus to him, Lord, good is to.us here to be;
Gyf þu wylt uton wyrcean her þreo eardungstowa
If you want.PRES.IND go.PRES.SUBJ.PL make.INF 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)

[103] As the EC-POPC discussed above is a particular type of EC, it is included in the data covered in this section.

(4.54) Ða andswarode Petrus him & cwæð, Lareow, **god** is þæt we her beon;
Then answered Peter him and said, Teacher, good is that we here be.PRES.SUBJ;
& uton wyrcan her þreo eardungstowa
and go.PRES.SUBJ.PL make.INF here 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 2.2.2.1, example (4.48) above), which takes the form of a *to*-clause in (4.53) and a subjunctive *that*-clause in (4.54). More generally, it is the subjunctive *that*-clause that was the original complement type in the SLC/ECs with the adjectives studied here. As discussed in section 2.2.2.1 above, the *to*-infinitive begins to mirror the distribution of the subjunctive *that*-clause in the Old English period. The diachronic data show that in the Middle English period, the *to*-infinitive also starts to replace the subjunctive *that*-clause in the construction studied here. In Table 4.23 below, I present the absolute frequencies and relative shares of the two formal types across the various periods. In Table 4.24, I present their normalized frequencies 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 2.2.2.1 above).

Table 4.23 indicates that of the two semantic types of complement, mandative clauses show the most marked development. As will be pointed out below, *to*-clauses start 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 retain the *that*-clause to a larger extent than the mandative complements. More precisely, in LModE the propositional complements have a 31.25%/68.75% ratio of *that*-clauses versus *to*-clauses, whereas the mandative ones (with both strong and weak adjectives) show a 20.16%/79.84% ratio. In PDE, 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 (chapter 5, section 2.2.2.1). In the remainder of this section, I will focus on mandative complements.

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	*that*	22	81.48	21	95.45	1	100	5	23.81	30	36.59	171	18.06	331	31.55
		to	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	*that*	17	73.91	47	97.92	9	47.37	24	41.38	73	33.03	208	22.29	475	26.43
		to	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	*that*	39	78.00	68	97.14	10	50.00	29	36.71	103	33.99	379	20.16	806	28.32
		to	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	*that*	2	100	9	75.00	0	-	2	66.67	6	100	10	31.25	158	49.84
		to	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 4.23: The development of the distribution of that- and to-clauses (absolute frequencies and relative shares)

Type of adj	Comp: sem	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	*that*	7.24	1.85	0.28	0.62	1.67	1.15	0.79
		to	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	*that*	5.60	4.14	2.56	2.99	4.07	1.39	1.13
		to	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	*that*	0.66	0.79	-	0.25	0.33	0.067	0.38
		to	-	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**

Table 4.24: The development of the distribution of that- and to-clauses (relative frequencies per 100,000 words)

The figures in Table 4.23 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. The data thus confirm the innovative status of the *to*-infinitive, which gradually replaces the older variant, viz. the *that*-clause. The change is evidenced by the following examples, in which (4.55) dates from Late Old English (*Ælfric's Catholic Homilie*s) and is construed with a subjunctive *that*-clause, whereas (4.56) dates from Late Middle English (*English Wycliffite Sermons*), and is construed with a *to*-clause.

(4.55) He andwyrde; Nis na **god** þæt man nyme his bearna hlaf.
He answered; not.is not good that one take.PRES.SUBJ his of.children bread
and awurpe hundum;
and throw.PRES.SUBJ for.dogs
'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)

(4.56) And Crist answeride and seyde 'Hit is not **good** to take þe breed þat
And Christ answered and said 'It is not good to take the bread
that.REL.PRON
falluþ to children, and ȝyuen hit to howndes to ete fro þese children.'
belongs to children, and give it to dogs to eat from thesechildren
'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 ?*a*1425 Wycl.Serm. (Add 40672) 401)

The examples are translations of the same Bible verse, but they are construed with a different formal type of complement. Semantically, both constructions involve mandative clauses. Examples like these thus confirm that the *to*-infinitive replaces the *that*-clause.

The same change in distribution was found by Los with **verbal matrices**, in which the *to*-clause gains in frequency after intention verbs and manipulative verbs at the cost of the subjunctive *that*-clause (Los 2005: 185–189). Los thus countered the previously 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 change is illustrated by the following examples from two manuscripts of Gregory's Dialogues (Los 2005: 179–185).

(4.57) Forþon þe he **gewilnode**, þæt he hæfde lof &
because [PRT] he desired, that he have[.PAST.IND/SUBJ] glory and
herenesse þæs clænan lifes
praise of.the [of.]clean[of.]life
'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))

(4.58) forþam þe he **gewilnode** to hæbbenne þæt lof & herunge his
because [PRT] he desired to have the glory and praise [for.]his
mæran drohtnunge
[for.]excellent [for.]conduct
'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))

(4.59) þæt hi **wæron genydede** […], þæt hi scolden niwe wisan hycgan &
that they were forced […], that they should new ways consider [.INF] and
smeagean
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))

(4.60) 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 (4.57) and (4.58) have the intention verb *gewilnian*, while (4.59) and (4.60) contain *niedan/neadian*, a verb of persuading and urging. For the Theme-argument of both verb classes, the earlier manuscript (C) has a subjunctive *that*-clause, cf. (4.57) and (4.59), whereas the later manuscript (H) contains *to*-clauses, cf. (4.58) and (4.60). 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 Old English BGAH and the Middle English PPCME (Los 2005: 185), are presented in Table 4.25 below. In this table, I have included Los's (2005) findings about the *to*-infinitive functioning as complement of intention verbs and manipulative verbs, the latter including verbs of persuading and urging as well as verbs of commanding and permitting.[104] It can be seen that these complements show a rather "abrupt jump in the ratio of *to*-infinitives to subjunctive clauses" (Los 2005: 188), viz. from 14.40 % in OE to 62.79% in EME. The adjectival complements, however, show a slightly less abrupt development, viz. from 10.83% in OE to 50.00% in EME. As the complements of the verbal matrices are semantically very similar to the mandative complements of the adjectives studied here, we can conclude that, although the adjectival complements have a much lower frequency than the verbal ones, they are nevertheless very comparable to Los's (2005) findings, and together these data bear witness to an important ongoing change in the clausal complementation system.

[104] 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."

Type of matrix	Type of compl	EOE 750–950		LOE 950–1150		Total OE 750–1150		EME 1150–1350	
		n	%	n	%	n	%	n	%
verb	*that*	352	85.44	492	85.71	844	85.60	160	37.21
	to	60	14.56	82	14.29	142	14.40	270	62.79
	total	412	100	574	100	986	100	430	100
adj	*that*	39	78.00	68	97.14	107	89.17	10	50.00
	to	11	22.00	2	2.86	13	10.83	10	50.00
	total	50	100	70	100	120	100	20	100

Table 4.25: 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)

As suggested by the description of the types of *to*-infinitival construction found with the adjectives studied here (see section 2.2.2.1), the rise of the *to*-infinitive in mandative expressions should be explained by **analogy** with the verbal complementation system. In fact, in the POPC and SLC/EC the *to*-infinitive competes with different types of expression, viz. 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 SLC/EC by analogy within the adjectival complementation system (see Figure 4.2). Morever, 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 (Van linden 2008c).[105] All of this confirms the conclusion that the *to*-infinitive has come 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 adduces corroborating evidence for the claim that the latter constructions served as the models of analogical extension.

The data also suggest 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 identify the spread of the *to*-infinitive as an example of paradigmatic analogy (De Smet 2008: 119–120), that is, "the extension of a construction from one environment to another on the basis of a link between the spreading construction and some other paradigmatically related construction" (De Smet 2008: 118). In this case, the *to*-infinitive spread from the intention and manipulative verb constructions (the source

[105] More precisely, the data refute the hypotheses that the influx of Romance adjectives in Middle English influenced the general increase of the *to*-infinitive, and that the decline of the subjunctive in past contexts in the same period (see section 2.1.2 above) may have promoted the use of the *to*-infinitive in past contexts.

syntagm(s)) to the adjectival mandative construction (the target syntagm) with the subjunctive *that*-clause as the paradigmatically related construction. On the other hand, the *to*-infinitive can also be argued 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. More specifically, the similarity between these two constructions resides 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, viz. the matrix subject.[106] 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 4.3.[107]

Analysis of EC data from later periods than Middle English reveals that after the major reversal of distribution in the Middle English period, the *to*-infinitive does 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 4.23 above, we can note only small differences (*that*-clauses: LME 36.71%, EModE 33.99%; *to*-clauses: LME 63.29%, EModE 66.01%). In Late Modern English, the share of the *to*-infinitive reaches its highest value with about 80%. However, in Present-day English, it has slightly decreased to about 72%. In short, after its rise in Middle English the *to*-infinitive stabilized at roughly a 3:1 ratio to the *that*-clause. This requires us to look for explanations for this new type of distribution.

Whereas with verbal matrices mandative *to*-clauses kept gaining in frequency at the expense of the *that*-clause up to 1800 (Rohdenburg 1995), the EC data show no comparable loss in frequency of the *that*-clause. This finding suggests that the **Modern English distribution** may be determined by other factors than those that brought about the rise of the *to*-infinitive. In the literature on verbal complementation, explanations have been formulated that relate the variation in clausal complements to semantic integration and discourse factors. The iconic principle of **semantic clause integration** was originally introduced by Givón (1980, 1990: ch. 13, 2001), who states that "the stronger is the *semantic bond* between the two events, the more extensive will be the *syntactic integration* of the two clauses into a single though complex clause" (2001: 40; italics his). He provides cross-linguistic evidence, showing that manipulative verbs, which have a

[106] This is invariably the case with intention verb constructions, cf. (4.57)–(4.58) above. With manipulative verb constructions, it is only in active clauses that the matrix subject is coreferential with the source of will. In passive clauses, as in (4.59)–(4.60) above, by contrast, the identity of the source has to be inferred from the context.

[107] 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).

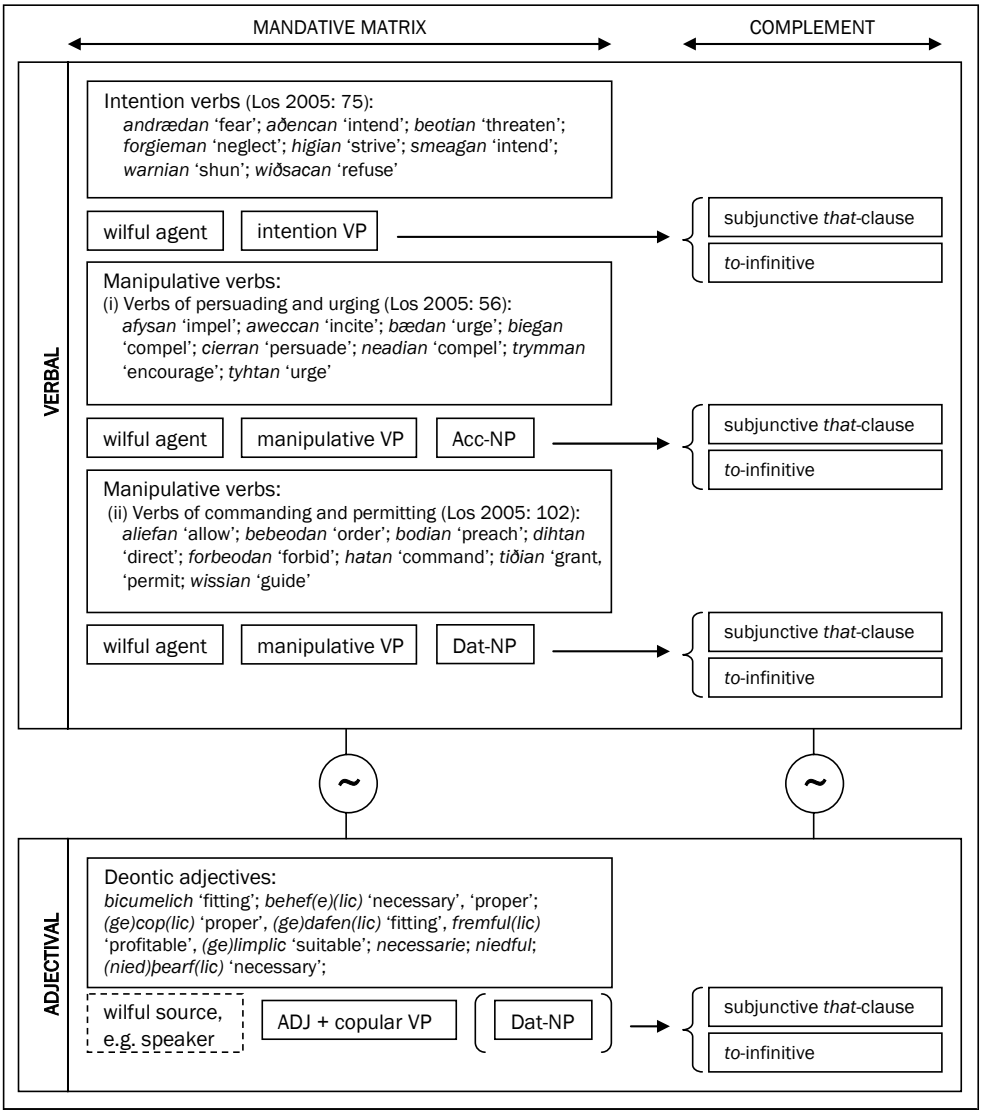

Figure 4.3: Syntagmatic and paradigmatic analogy (~) between verbal and adjectival mandative constructions in Middle English

strong semantic bond with their dependent SoA, tend to be coded by non-finite structures, such as infinitives, whereas utterance verbs, which have a much weaker semantic bond with their dependent SoA, tend to be coded by 'more' finite structures, such as *that*-clauses. The strength of the semantic bond between two SoAs is partly determined by the presence of an element of will (Givón 1990: 528–530). Applied to the data presented in Table 4.23, the principle of clause integration would predict that strong adjectival matrices

have higher shares of mandative *to*-clauses than weak matrices, as the first type of matrix involves a stronger element of will than the second one. However, Table Table 4.23 shows that this is only the case in the Late Modern English period.[108]

If we look at the data for each adjective of the dataset separately, we can conclude more definitively that the principle of semantic integration does not hold. There are strong adjectives which prefer *that*-clauses to *to*-clauses, such as *vital* and *crucial*, or with which both clause types are almost equally frequent, such as *essential*. For these adjectives, the current distribution of mandative clauses is given in Table 4.26 below. The table also includes the data of another strong adjective, viz. *necessary*, for the sake of comparison.

Type of compl	*vital*			*crucial*			*essential*			*necessary*		
	n	N	%	n	N	%	n	N	%	n	N	%
that	144	0.34	64.57	27	0.064	54.00	117	0.28	49.16	25	0.059	4.97
to	79	0.19	35.43	23	0.055	46.00	121	0.29	50.84	478	1.14	95.03
total	223	0.53	100	50	0.12	100	238	0.57	100	503	1.19	100

Table 4.26: The distribution of mandative that- and to-clauses in PDE (CB) with vital, crucial, essential, and necessary

Although all four adjectives express a strong degree of desirability or necessity and thus should be able to establish an equally strong semantic bond with their dependent SoA, they clearly differ as to the types of clausal complement they prefer. *Necessary*, for example, combines in an overwhelming majority of cases with the *to*-infinitive (about 95%). As noted above, *vital*, by contrast, prefers *that*-clauses to *to*-infinitives (64.57% to 35.43%), and *crucial* does so as well, though less markedly (54.00% to 46.00%). The distribution of *essential*, finally, is almost 50-50. We thus have to conclude that the principle of semantic integration as defined by Givón (1990: 516) does not apply to the adjectival data. Rather, these data suggest that the distribution of *that*- and *to*-clauses may be lexically determined to a large extent, understood here as applying to the adjectives individually.

A second type of explanation for distributional patterns of complements relates to discourse factors, such as **information structure**. Noël (2003: 365), for instance, in his article on the variation between accusative-and-infinitive-constructions and *that*-clauses after verbs such as *believe*, *think*, and *judge*, cites Borkin (1984: 60–61), who argues that infinitival clauses "rely on previous discourse to complete their function", while *that*-clauses do not (cf. Kuno 1972). Before we focus on the role of information structure in the variation between *that*- and *to*-clauses in ECs, it should be noted that these are both

[108] However, the notion of an element of will is not unproblematic. As argued by Cristofaro (2003: 121), SoAs take place independently of the condition of desire, "so in principle the fact that somebody wants some SoA to occur need not have any effect on the actual occurrence of that SoA." In her view, constructions with weak or strong adjectives involve the same type of complement relation. The involvement of an element of will does play a role, though, in the cross-linguistic coding of the relevant complement relations (Cristofaro 2003: ch. 9).

semantically and syntactically distinct from the constructions studied in Noël (2003) and Los (2005). Crucially, the non-finite variants differ in terms of control, which can be thought of as "a primarily interpretative relation of correspondence between some text participant and the agent implicitly invoked by any form referring to an action" (De Smet 2007: 91) (cf. Kortmann 1991, 1995; Duffley 2000). The constructions examined in Noël (2003) and Los (2005) all have controlled *to*-infinitives, whereas this is not necessarily the case with mandative ECs. In the accusative-and-infinitive-constructions studied in Noël (2003) the *to*-infinitives are preceded by (oblique) NPs expressing their subjects. It is together with this NP that they form the object clause of the matrix verb. In the following example, the subject of the *to*-infinitive is marked in bold.

(4.61) The real New Zealander who can be found propping up a bar wearing three days of stubble shorts and a black singlet believes **Auckland** to be a city of pansies in outrageous ties who have forsaken the one true religion rugby in favour of messing about in boats. (CB, times)

The *to*-infinitive constructions with intention verbs and manipulative verbs discussed in Los (2005) also have controlled *to*-infinitives, as their agents are coreferential with the matrix subject (cf. (4.57)–(4.58)) and matrix object respectively. When manipulative verb constructions are passivized, as in (4.59)–(4.60), they involve subject control as well. ECs, by contrast, do not always have controlled *to*-infinitives. In example (4.62) below, for instance, the speaker gives us no clue as to who is supposed to educate young people about the dangers of drugs; in (4.62) the implicit agent has generic or arbitrary reference, or in generative terms 'arbitrary PRO' (cf. Los 2005: 292).

(4.62) With the scourge of illegal narcotics infecting every part of the world, it is **crucial** to educate young people about the dangers of drugs. (CB, sunnow)

This difference in control relations suggests that the factors motivating the distribution of clausal complements with intention, manipulative, (acquisition of) knowledge and propositional attitude verbs cannot simply be extrapolated to mandative ECs with adjectival matrices.

Nevertheless, there are indications that information structure does play a role in the distribution of mandative *that*- and *to*-clauses. In particular, 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 salient subjects as OE, as shown in Table 4.27 below (53.30% versus 24.30%). This finding may (at least partly) explain why the mandative *that*-clause has resisted total replacement by the *to*-clause. Insofar as the *that*-clause can be used to accommodate heavy or complex subjects, it has a functionality the *to*-clause lacks. 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.

(4.63) 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*)

Informational salience	OE 750–1150		LModE 1710–1920	
	n	%	n	%
generic *man*	18	16.82	0	0.00
generic: other expression	4	3.74	3	0.79
personal pronoun + coreferential 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

Table 4.27: The informational salience of subjects of mandative *that*-clauses in Old and Late Modern English

The table also shows which type of *that*-clauses was replaced by *to*-infinitival clauses, viz. those with the indefinite pronoun *man* as subject (cf. (4.55)–(4.56) above; see also Los (2005: 290–293) on verbal matrices). Because *man* has generic or arbitrary reference, these *that*-clauses can be substituted by non-controlled *to*-clauses, as in (4.56) and (4.62), without a loss of information, as least as regards the subject. Table 4.27 shows that the *that*-clauses with *man* have disappeared in Late Modern English.[109]

Of course, the rise of the *to*-infinitive was not restricted to non-controlled *to*-clauses taking over *that*-clauses with the indefinite pronoun *man*. The following examples from the Late Modern and Present-day English period show that the *to*-infinitive can have a controlled interpretation in ECs as well.

(4.64) Before I conclude, it is **proper** to mention that the kirk-bell, which had to this time, from time immemorial, hung on an ash-tree, was one stormy night cast down by the breaking of the branch, which was the cause of the heritors agreeing to build the steeple. (CLMETEV 1821 Galt, *Annals of the parish*)

[109] For an explanation why the more recent form *one* did not take over from *man*, see Los (2005: ch. 10).

(4.65) This Marloe, we are told, presuming upon his own little wit, thought **proper** to practise the most epicurean indulgence, and openly profess'd atheism; he denied God, Our Saviour; he blasphemed the adorable Trinity, and, as it was reported, wrote several discourses against it, affirming Our Saviour to be a deceiver; (CLMETEV 1753 Cibber, *The lives of poets of Great Britain and Ireland* (Vol. 1))

(4.66) Be assured, whenever it may seem **fitting** for me to take so long a journey, I shall come to you with as cordial a feeling of unchanged and unabated friendship as that with which you I know will receive me. (CLMETEV 1847 Cottle, *Reminiscences of Samuel Taylor Coleridge and Robert Southey*)

(4.67) American State Department officials say that in his meeting with Secretary of State Baker, Mr Shevardnadze made clear that neutrality was not the answer and that Moscow also considered it **important** to keep American troops in Europe. (CB, bbc)

In (4.64), the implicit agent of the *to*-infinitive *to mention* clearly is the *I*-person, who is explicitly mentioned in the temporal subclause preceding the mandative construction. The *that*-clause functioning as object of *to mention* shows that the *I*-person does carry out the activity of mentioning. In the complex transitive construction in (4.65), the context makes it clear that the subject of the matrix clause (viz. *this Marlow*) is coreferential with the agent of the *to*-infinitive *to practise*. It is the poet Christopher Marlowe who practised the most epicurean indulgence and openly professed atheism. In (4.66), the agent of the *to*-infinitive *to take* is explicitly mentioned in the *for*-PP preceding the *to*-clause, viz. *for me*, and repeated as the subject of the matrix subject *I* (*shall come to you*). The examples in (4.65) and (4.66) illustrate the most typical control relations in complex transitive and *for…to*-infinitive constructions, but these patterns cannot be generalized. Example (4.67), for instance, is also a complex transitive construction, but the context suggests that the matrix subject *Moscow* is not the implicit agent of the *to*-infinitive *to keep*, as the Sovjet Union has no say in NATO resolutions, let alone in US decisions. The examples thus show that the *to*-infinitive in the mandative EC can be controlled, and hence, that it was able to replace also non-generic *that*-clauses.

Even if the contrast with Old English in terms of information structure is striking, LModE *that*-clauses still include a considerable portion of complements with informationally low subjects (46.70%), especially pronominal subjects (44.59%), as in (4.68) below. Of course, pronouns can also be used in contrastive contexts, as in (4.69), but such cases were analysed as involving informationally salient subjects (0.79%).

(4.68) The young adventurer is not to expect to have every difficulty smoothed for him by the hand of another. […] On the contrary it is **necessary** that he should learn that human life is a state of hardship, that the adversary we have to encounter does not always present himself with his fangs sheathed in the woolly softness which occasionally renders them harmless […]. (CLMETEV 1831 Godwin, *Thoughts on man*)

(4.69) With these words he gave him a letter directed, as he had said, but not sealed, which Horatio, after he had manifested the sense he had of so unhoped an obligation, reminded him of. As it concerns only yourself, said the baron, it is **proper** you should read it first, and I will then put on my signet. (CLMETEV 1744 Haywood, *The fortunate foundling*s)

The relatively large share of pronominal subjects in LModE *that*-clauses suggests that the informational salience of the subject cannot be the only factor motivating the use of finite complements. In what follows, I will mention two other factors that may be relevant, though none of them has been examined systematically.

A first additional factor pertains to the modal relation established by the verbal form. A finite clause enables the speaker to specify the type of modal relation the mandative clause has to the matrix event. In (4.69), for instance, we find both *should* and *will* as finite forms of the *that*-clause, each expressing a different type of modal meaning, whereas this meaning is left unspecified in *to*-clause complements. Emphasis on the modal relation is also found with non-contrastive pronominal subjects, as in (4.70) below, in which the main verb of the finite *should* (viz. *convince*) has been elided.

(4.70) Never maintain an argument with heat and clamor, though you think or know yourself to be in the right: but give your opinion modestly and coolly, which is the only way to convince; and, if that does not do, try to change the conversation, by saying, with good humor, "We shall hardly convince one another, nor is it **necessary** that we should, so let us talk of something else." (CLMETEV 1747 Chesterfield, *Letters to his son*)

Secondly, *that*-clauses (even with pronominal subjects) may also be preferred for stylistic reasons. By using a *that*-clause the speaker/writer can avoid the use of a split infinitive, as in (4.71), or the immediate succession of *to*-infinitives, as in (4.72). The preference for a *that*-clause in examples such as (4.72) can be explained by 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).

(4.71) He at once perceived their danger, so they held a council, and came to the following resolutions:-- That it would be **necessary** that they should immediately stockade the storehouse, so as to render it impossible for any one to get in; and that, as soon as the fortification was complete, the storehouse should be turned into their dwelling-house; (CLMETEV 1841 Marryat, *Masterman ready*)

(4.72) There was a considerable difference between the ages of my parents, but this circumstance seemed to unite them only closer in bonds of devoted affection. There was a sense of justice in my father's upright mind which rendered it **necessary** that he should approve highly to love strongly. (CLMETEV 1818 Shelley, *Frankenstein*)

More generally, then, the role of information structure in the distribution of mandative *that*- and *to*-clauses can be linked to the distinct grounding properties of the two competing expressions, i.e. properties indicating the relation of the complement to the speech event or 'ground' (Langacker 1991: 193–200). While *to*-clauses do not need an overt subject and depend on the matrix for their temporal anchoring, *that*-clauses require

an overt subject (which may be informationally salient) and offer the possibility to explicitly code the modal relation of the complement to the matrix (cf. Halliday 1994: 75–77).[110]

By way of conclusion, I present the changing distribution of *that*- and *to*-clauses with adjectival matrices in Figures 4.4 and 4.5 below. The graphs only include data on the mandative clauses, as these offer the clearest diachronic picture. Figure 4.4 is based on the normalized frequencies given in Table 4.24, and distinguishes between weak and strong adjectives; Figure 4.5 is based on the relative shares of the *that*- and *to*-clauses given in Table 4.23 above, and covers the whole dataset. It is clear from Figure 4.4 that the frequencies of the *that*-clauses (in grey lines) show a general downward movement, whereas the innovative *to*-infinitives (in black lines) show a steep climb in the ME period (here, the weak adjectives precede the strong ones). We were thus able 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 frequency of the clausal complements in the data. In terms of relative shares 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 4.5. Figure 4.5 shows particularly clearly that the major reversal in distribution occurs in the EME period (cf. Los 2005: 185–189). However, the *that*-clause remains available as a mandative complement expression, which may even be the preferred option for certain adjectives, such as *vital* and *crucial* (see Table 4.26).

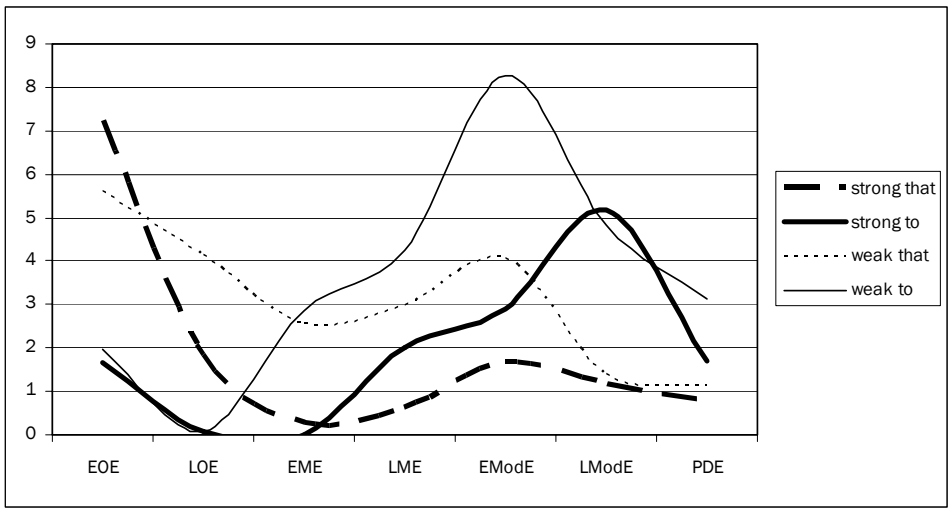

Figure 4.4: The development of the distribution of mandative *that*- and *to*-clauses with strong and weak adjectives (normalized frequencies)

[110] Remember that mandative clauses in general express potential meaning, so both *to*-clauses and *that*-clauses involve tenseless SoAs (see chapter 1, section 2.2.2).

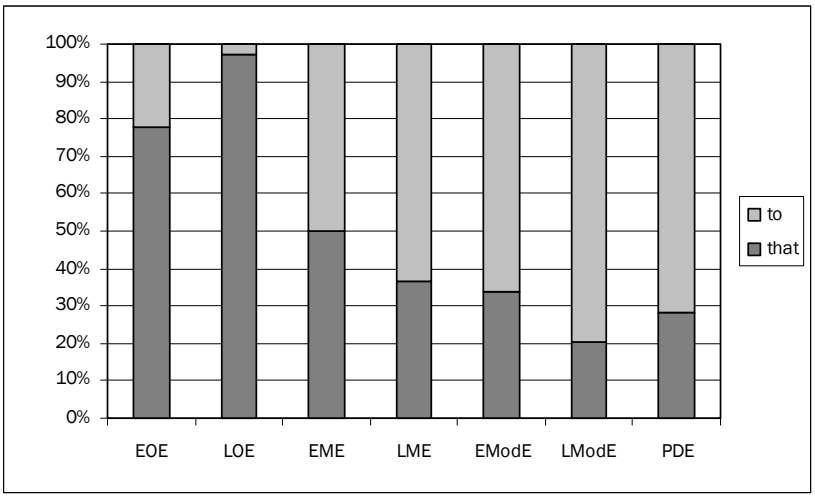

Figure 4.5: The development of the distribution of mandative *that*- and *to*-clauses (relative shares)

The rise of the *to*-infinitive in adjectival constructions has been explained by analogy with the changes observed in the verbal complementation system by Los (2005). It was found that her account of the changing distribution of the *to*-infinitive for intention verbs and manipulative verbs could not be readily applied to the adjectives studied. In the case of the verbal matrices, the *to*-infinitive spread from the purposive environment to the Theme-complement environment (see section 2.2.2.1), 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, viz. the subjunctive *that*-clause (paradigmatic analogy, cf. De Smet 2008: 118). Within the system of adjectival complementation, however, no such development could be established, as the purposive POPC and the Theme-complement SLC/EC did not share competing expressions. I have therefore made a case 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 *to*-infinitive in mandative constructions with intention and manipulative verbs. I have argued that this distributional change took place because of the semantic similarity between the verbal and adjectival syntagms as well as the availability of the subjunctive *that*-clause in both syntagms, i.e. through syntagmatic as well as paradigmatic analogy.

For the later data, however, I proposed that different types of explanations are required. Although the variation in clausal complements of adjectives was seen 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 used when there is no need to express the agent overtly.[111] 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, invariably have an overt subject, and in this sense they are most suited to accommodate informationally salient subjects. They also allow 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 (cf. Noël 2003). These 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.

3 Conclusion

This chapter shares its diachronic perspective with chapter 3, but it has focused on issues of syntactic development rather than semantic, and it has looked at the clausal complement patterns, rather than the adjectival matrix. More specifically, this chapter has concentrated on the syntactic relation between the matrix and the complement, and on the origin, development and distribution of two major formal types, viz. *that*-clauses and *to*-clauses. Especially in the discussion of the complements, the data illustrated the diachronic validity of the conceptual map. In addition, they revealed changes that can be related to changes described for verbal matrices.

In the first part, I have sketched the development of the copular **extraposition construction** (EC) from its forerunner, the subjectless construction (SLC). The diachronic data on the occurrence of surface subject forms suggested that this change took place in the Middle English period, as has been observed in the existing literature. In the SLC the relation between matrix and complement is commonly regarded as undecidable, whereas in the EC the complement functions as subject of the matrix finite. However, I also reported on correlative *that*-structures in Old English, which might argue in favour of a subject clause analysis in the SLC as well. In addition to the copular extraposition construction, I also looked at the development of matrix constructions with transitive verbs. The active transitive construction is already found in Old English, but it gains in frequency only in the Early Modern English period (up to 33.66%). This is also the period in which the passive transitive construction appears, which remains 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

[111] 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.

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. Thus, this part has described the origin and development of the matrix constructions that are central to this study, and it has linked these with the categories in the conceptual map.

In the second part, which focused on the formal **types of clausal complements**, the adjectival data have confirmed that the conceptual and lexico-semantic distinctions of the conceptual map apply across the various historical stages. 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*-clauses revealed that from Middle English onwards the two semantic types become formally distinguishable in terms of mood type, as the subjunctive becomes 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. In fact, with the mandative complements the innovative *to*-infinitive encroaches upon the *that*-clause most massively in the Middle English period, and it remains the most frequent formal type from EModE onwards. The propositional complements, by contrast, are too few up to EModE to draw firm conclusions for the earlier periods, but in LModE and PDE 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 validity of the conceptual map.

Furthermore, the adjectival data presented in this chapter provide further evidence for changes observed with **verbal matrices**. The development of the finite form in mandative complements of adjectival predicates, for instance, shows many similarities with that of verbal matrices, in that in both types the subjunctive forms lose frequency over time in favour of periphrastic, indicative or ambiguous forms. The adjectical data on the *to*-infinitive, in turn, confirm the changing distribution of the *to*-infinitive described by Los (2005) within a broader view of the complementation system in English. She has shown that 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 is more frequent in purposive contexts (i.e., in the POPC) than in later periods bears witness to its *to*-PP origin. Likewise, the attestation of the *to*-infinitive in Old English SLC/ECs with adjectives, in which it functions as a Theme-argument, verifies that its distribution exceeded that of the purposive *to*-PP. Finally, the data on the diachronic distribution of *that*- and *to*-clauses corroborates 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 encroaches

upon the *that*-clause more abruptly and massively than was found with adjectival mandative constructions. In fact, 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, in turn, corroborated 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 thus contributes to a more thorough understanding of the diachrony of the complementation system in English (and maybe across languages as well).

Finally, in addition to an illustration of the diachronic validity of the conceptual map and an attempt to fill the gap in the literature on adjectival complementation, this chapter also serves as a **descriptive background** to the next chapter, chapter 5. More precisely, the discussions of the relation between matrix and complement and those of the clausal complement patterns have elucidated the diachrony of the constructions dealt with in chapter 5. In this chapter, which takes a more theoretical approach, I will present two case-studies, which provide cross-constructional and further diachronic evidence in support of the conceptual map respectively. The first study will take a closer look at the POPCs introduced in section 2.2.2.1 above. It will sketch the history of the post-adjectival *to*-infinitive construction, and it will show that in this type of construction also, weak and strong adjectives behave differently, not only in semantic but also in syntactic terms. The second case-study investigates the development of propositional complements from mandative ones, based on two sets of adjectives. In this study, I will focus on the EC, and I will take a closer look at the two major distinctions presented here, viz. the semantic distinction between mandative and propositional complements, and the formal distinction between *that*-clauses and *to*-clauses. Moreover, with regard to the first distinction, I will refrain from the rigorous analysis into two discrete types adopted in this chapter. Rather, I will focus on bridging contexts as well, and I will show that these play an important role in the development of propositional complements, at least with one set of adjectives. As this study will show that propositional complements develop from mandative ones, it adduces evidence in favour of the diachronic validity of the conceptual map, just like chapter 3 did in terms of the semantic development of the adjectival matrix.

Chapter 5
The diachrony of the clausal complement patterns: Two case-studies

While chapter 4 provided a general diachronic account of the clausal complement patterns found with adjectival matrices, the present chapter presents two case-studies within this domain, which offer independent arguments in favour of the conceptual map introduced in chapter 1. In addition, the two case-studies offer a diachronic explanation for the synchronic situation, viz. the structural possibilities of complementation patterns and their frequency. Much like the general description in chapter 4, both studies focus on the relation between matrix and complement as well as on the types of clausal complement.

The first study, presented in section 1 below, takes a closer look at the post-predicate *to*-infinitive construction (POPC), which was introduced in chapter 4, section 2.2.2.1, or, more generally, the post-adjectival *to*-infinitive construction. It will be shown that in this type of construction, weak and strong adjectives pattern differently, not only in semantic but also in syntactic terms. In particular, they differ in their potential to express deontic and/or evaluative meaning. Thus, it will become clear that the lexico-semantic and conceptual distinctions in the conceptual map apply both to the extraposition construction and to the post-adjectival infinitive construction. Therefore, this study presents arguments in favour of the cross-constructional validity of the conceptual map.

The second contribution, presented in section 2, concentrates on the extraposition construction (EC) (see chapter 4, sections 1.1 and 1.2). It offers a functional description of the synchronic patterns of complementation, and it relates this with insights from the typological literature on complementation. Importantly, this section also investigates the diachronic developments by which the present system was fashioned. In particular, it concentrates 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, viz. *essential* and *crucial* (cf. chapter 3, sections 2.4 and 4.4), are also marginally adopting 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, viz. importance and appropriateness adjectives. These pathways can be characterized by an upward movement in the conceptual plane of the map (viz. from deontic to non-modal evaluative), just like the pathways described for the strong adjectival matrices in chapter 3 (viz. from dynamic to deontic). More generally, together with chapter 3, the present chapter reveals the diachronic relations between the modal-evaluative categories expressed by the adjectival constructions studied here.

1 The development of the post-adjectival *to*-infinitive[1]

This section focuses on the post-predicate *to*-infinitive construction, introduced in chapter 4, section 2.2.2.1. Present-day English examples are given in (5.1) and (5.2) below. This study also includes *to*-infinitives following postposed or appositive adjectives, as illustrated in (5.3) and (5.4). Because of these different positions or functions of the adjective, I will use the term 'post-adjectival *to*-infinitive construction' (PAC) (cf. Van der Gaaf 1928b) to cover all examples given below.

(5.1) Too much enthusiasm when washing your hair may dry it out. One wash shampoos are an ideal protection against this and are also **convenient** to take on holiday (who wants to spend too much time in the bathroom when there is the nightlife to explore?). (CB, ukmags)

(5.2) Erm what I have done is to keep my eye on the ball and when things are **necessary** to be done I've done them. (CB, ukspok)

(5.3) "Claud he eats all he wants to and never weighs over one hundred and seventy-five pounds, but me I just look at something **good** to eat and I gain some weight." (CB, usbooks)

(5.4) "I thank you for these marks of your esteem and confidence," said Edmund; "be assured that I will not abuse them; nor do I desire to pry into secrets not **proper** to be revealed." (CLMETEV 1777 Reeve, *The old English baron*)

These constructions have traditionally been analysed as *tough*-constructions (e.g. Fischer 1991: 153). In this section, I will argue that they can in fact be divided into two basic types, with distinct semantic and syntactic properties. In addition, I will contend that this distinction correlates with that between deontic and non-modal evaluative constructions observed for the adjectives in extraposition constructions (ECs) (see chapter 1, section 2.2.3, and section 2 below). At the same time, it will be shown that the occurrence of the adjectives studied in the two types of construction is lexico-semantically determined, just like their distribution across deontic and non-modal evaluative ECs. Therefore, this section will make it clear that the conceptual and lexico-semantic distinctions that are at work in the conceptual map apply across extraposition and post-adjectival *to*-infinitive constructions.

In the examples above, the semantic role of the subjects in (5.1) and (5.2) and the noun phrases preceding the adjectives in (5.3) and (5.4) vis-à-vis the *to*-clauses is invariably that of patient. In the traditional (generative) analysis, the examples instantiate the '*tough*-movement' construction: they result from object-to-subject raising applied to the more 'basic' extraposition construction (e.g., *It is convenient to take one wash shampoos on holidays* for (5.1)) (e.g., Jacobs and Rosenbaum 1968: 27).[2] The *tough*-construction is

[1] This section is based on Van linden (2008a).

[2] Functionally oriented accounts do not allow for structure-changing operations such as transformational movement, but they nevertheless assume the PAC and its extraposed counterpart to share the same underlying predication, e.g. convenient$_{A}$ (take$_{V}$ (x_i)$_{Ag}$ (one wash shampoos)$_{Go}$) for (5.1) (cf. Dik 1979: 126–127). The extraposition construction "gives rather direct expression to this underlying predication," whereas the PAC selects the Goal of the embedded predication (*one wash*

typically found with adjectives expressing the degree of ease or difficulty involved in an activity (*tough*, *simple*, *easy*), but this *easy*-class is often taken to include adjectives evaluating the fitness or necessity of entities or activities (e.g., Fischer 1991: 178–179; Dubinsky 1997: 82). In contrast to the traditional analysis, I will argue that the examples illustrate two semantically and syntactically distinct constructions. This distinction relates to the type of relation between matrix (element) and complement. More precisely, what crucially distinguishes the two types is whether the adjective involved modifies an activity or an entity. In the first case, the expression can be paraphrased by an extraposition construction, such as for (5.4) (*it is not proper to reveal these secrets*). This is what I will call the 'activity-oriented' type. Syntactically, this type involves object raising. In example (5.3), however, the adjective modifies an entity. Semantically, *something good to eat* cannot be adequately paraphrased by *it is good to eat something*, but rather by 'something that can be characterized as good for the purpose of or with regard to eating'. Therefore, examples such as (5.3) will be termed 'characteristic-oriented' constructions. Syntactically, this type involves object deletion.[3]

The examples above not only differ in terms of the relation between matrix element and complement. In addition, they also show two different types of clausal complement, viz. active *to*-clauses in (5.1) and (5.3) versus passive *to*-clauses in (5.2) and (5.4). This variation in clausal voice type appeared in the Late Middle English period, after the passive *to*-infinitive had entered the grammatical system of the language. Interestingly, this study will show that the development of this formal distinction between the clausal complements is motivated by the type of relation between matrix and complement. In other words, I will argue that the distinction between activity-oriented and characteristic-oriented constructions can be used to explain the variation in voice type.

The rest of this section is organized as follows. Section 1.1 presents the adjectives that are found in the post-adjectival *to*-infinitive construction across the various periods. Section 1.2 focuses on the relation between the matrix adjective and the clausal complement; it discusses the distinction between activity-oriented and characteristic-oriented adjectival constructions in semantic and syntactic terms. In addition, it also examines the types of adjectives that are found in the two construction types. In this perspective, this section will demonstrate the cross-constructional validity of the conceptual map. Section 1.3 concentrates on the types of clausal complement, presenting a historical sketch of the post-adjectival infinitive construction. Section 1.3.1 discusses the

shampoos) as the subject of the higher predicate *convenient*, "and thus as the primary vantage point from which the state of affairs [...] is presented" (Dik 1979: 127). The cognitive approach, however, does not make this assumption: "'Raising' and their 'nonraising' counterparts are not derived from the same underlying structure, nor one from the other. They instantiate separate and parallel constructions, each representing its own way of construing and symbolizing situations that may in some cases be the same" (Langacker 1995: 36).

[3] The distinction between activity- and characteristic-oriented constructions has been hinted at by Miller (2002: 207–219), who notes that *to*-infinitival constructions with adjectives such as *good*, *bad*, *nice* and *interesting* are "ambiguous in modifying D/NPs or evaluating the activity of the infinitive" (2002: 208).

developments as they have been described in the literature, with special attention to the rise and spread of the passive *to*-infinitive. In section 1.3.2, I will show that the distinction between activity-oriented and characteristic-oriented meaning offers an explanation for the seemingly random variation of clausal voice type. Section 1.4, finally, presents the main conclusions.

1.1 The data

The data used for this study are the adjectives presented in chapter 2, section 2.1, Table 2.1, as they were retrieved in the diachronic and synchronic corpora presented in chapter 2, section 2.2, Table 2.3. It should be noted, though, that not all adjectives listed there occur in the PAC. In fact, only the items presented in Table 5.1 below are found in the construction studied here. Again, the numbers between brackets indicate the number of tokens of the adjective or, in case I used more a specific query, the number of instances matching that query. All these data have been looked at, but invariably only a small portion of them featured the PAC. As this construction has become very rare in Present-day English, the data used here are extracted from the entire COBUILD corpus, including Australian and American data.[4]

Period	Strength	Adjectives
OE (1,787)	weak (1,748)	bryce (3), (ge)coplic (2), fremful (10), god (1,733)
	strong (39)	behefe (6), niedbehefe (14), niedþearflic (19)
ME (2,705)	weak (2,617)	able (33), bicumelich (28), convenient (8), expedient (5), good (2,525), semeli (18)
	strong (88)	behefe (19), niedful (69)
EModE (4,209)	weak (3,391)	convenient (192), desirable (13), expedient (27), fit (288), fitting (18), good (2,438), meet (120), profitable (61), proper (137), skilful (32), suitable (27), useful (38)
	strong (818)	necessary (802), needful (16)
LModE (9,393)	weak (6,945)	convenient (420), desirable (415), expedient (93), fit (951), good (530), important (1,784), proper (2,361), suitable (391)
	strong (2,448)	essential (553), indispensable (222), necessary (1,479), needful (194)
PDE (7,100)	weak (5,051)	convenient (126), fit (42), fitting (28), good (2,760), important (1,856), proper (143), suitable (96)
	strong (2,049)	critical (65), crucial (110), essential (304), necessary (1,325), needful (14), vital (231)

Table 5.1: The adjectives studied occurring in PACs

[4] The CB subcorpora have been presented in chapter 2, section 2.2, Table 2.8.

1.2 The relation between matrix and complement: Activity-oriented versus characteristic-oriented meaning

In this section, I will concentrate on the relation between the matrix adjective and the clausal complement, and I will argue that the post-adjectival infinitive constructions should be divided into two types, viz. activity-oriented and characteristic-oriented constructions. Moreover, I will point out that this distinction bears a close resemblance to that between deontic and non-modal evaluative extraposition constructions discussed in chapter 1, section 2.2.3. Together with the findings on the distribution of lexico-semantic classes across the two types of construction, this resemblance constitutes a further argument in favour of the cross-constructional validity of the conceptual map.

As mentioned above, the distinction between activity-oriented and characteristic-oriented constructions involves a difference in the type of relation between the matrix adjective and the clausal complement.[5] The semantic and syntactic arguments for it have already been given above, in the discussion of the modern examples (5.3) and (5.4). More generally, a focus on **activity**, which includes bringing about or maintaining a state, seems to trigger a deontic-modal type of interpretation, whereas a focus on the **characteristics** of an entity seems to trigger a purely evaluative meaning. As already suggested in chapter 4, section 2.2.2.1, the following examples show that the distinction can be made as of the Old English period. Note that in this period, the constructions usually do not differ in formal properties.

(5.5) Eft, blod bið **god** to lætanne on foranlenctene of þam winstran earme.
Afterwards, blood is good to let in early.springtime off the left arm
[literally] 'Afterwards, blood is good to let from the left arm in the early springtime.' (YCOE 940–960 Lch II (2) 43.1.10)

[5] It may be questioned whether the *to*-clauses of the PAC function as adjuncts or complements. As complements of adjectives, like those of nouns (cf. Keizer 2004), are not obligatory, the decision is hard to make. Unlike verbal complementation, therefore, complementation in the adjectival (and nominal) domain(s) seems a fuzzy category (De Smet 2008: 137, note 31). Formal approaches, however, like Miller (2002), make a clear distinction between more adjunct-like and more complement-like types. Miller (2002) analyses *to*-infinitives occurring in object raising constructions as complements (e.g. *Joe was easy to find*, Miller 2002: 194, 208 (34a)), and those occurring in object deletion constructions as (goal) adjuncts (e.g. *Mary is pretty to look at*, Miller 2002: 208 (33a), 209). Hence, in this perspective, activity-oriented constructions involve *to*-infinitival complements, whereas characteristic-oriented constructions involve *to*-infinitival adjuncts. This analysis ties in with the finding that in the second type of construction – unlike in the first type – the *to*-infinitive can be paraphrased by a purposive *to*-PP functioning as a goal adjunct (cf. chapter 4, section 2.2.2.1; see also below). Because of lack of agreement in the literature, I stick to the traditional label of complement for the infinitives in both construction types for the sale of convenience.

(5.6) ða geseah ðæt wif ðæt ðæt treow wæs **god** to etenne, be ðam ðe
Then saw that wife that that tree was good to eat, by that PRT
hyre ðuhte, & wlitig on eagum & lustbære on gesyhðe.
to.her seemed, and beautiful in eyes and pleasant in sight
'Then that wife [i.e. Eve, AVL] saw that that tree was good to eat, and, as it seemed to her, beautiful to the eyes and pleasant in sight.' (YCOE 1000–1050 Gen 3.6)

In example (5.5), *god* modifies the activity of blood-letting, rather than the entity 'blood'. The extraposition paraphrase *it is good to let blood from the left arm* is felicitous. In fact, this is how Cockayne (1865: ii 257) has translated the sentence to Modern English. The felicity of the extraposition paraphrase suggests a syntactic analysis of object raising, and emphasizes a modal meaning of weak deontic desirability for the construction as a whole. It also suggests that the construction is of a predicand type (Huddleston and Pullum 2002: 217, 530), as the adjective seems to be standing in a predicative relation to the *to*-infinitive (cf. De Smet 2008: 139). Thus, (5.5) clearly has activity-oriented meaning. Moreover, a characteristic-oriented reading is ruled out contextually. It is not the case that the quality of blood needs to meet some requirements before blood-letting can be practised. Rather, blood-letting is recommended here because of problems with the spleen. In (5.6), by contrast, *god* does not modify an activity (the eating of the tree), but rather an entity (the tree). More specifically, *god* is used to evaluate the characteristics of 'that tree' as good for the purpose of or with regard to a particular activity, viz. eating. In this case, a modally flavoured activity-oriented meaning is ruled out, because whether it is good to eat from the tree is not something that can be observed empirically:[6] the extraposition paraphrase *that wife saw that it was good to eat the tree* does not make much sense (remember also that Eve knew very well that it was not good to eat from it, as God forbade Adam and her to do so). The failure of the extraposition paraphrase test suggests that the syntactic structure does not involve object raising, but rather object deletion. In addition, it shows that the construction is of a non-predicand type, as the adjective cannot be understood to be standing in a predicative relation to the *to*-infinitive. Rather, it is predicated of the subject entity (e.g. *ðæt treow* in (5.6)).[7] We can thus conclude that (5.6) has purely evaluative characteristic-oriented meaning, rather than activity-oriented meaning, and more generally, that both types already occurred in the Old English period.

[6] The following adjectival phrases *wlitig on eagum & lustbære on gesyhðe* confirm that the verb *see* is used in its perception sense. Thus, it does not mean 'realize' (acquisition of knowledge sense, cf. Noonan 1985: 118), in which case the extraposition paraphrase would be felicitous.

[7] I agree with the basic cognitive tenet that differences in construal imply differences in meaning (cf. Langacker 1995: 38), and hence, I acknowledge that the extraposition paraphrase does not render exactly the same meaning as the object-raising construction. In fact, from a cognitive perspective the very notion of paraphrasis is problematic, as all differences in wording go together with differences in construal and meaning (although the conceptual base may be the same). Nevertheless, I will use the extraposition paraphrase here, as I think it serves well to discriminate between activity-oriented and characteristic-oriented constructions. In particular, in my view, the examples above show that the extraposition paraphrase is semantically much closer to the first type than to the second one.

The distinction between the two types of construction can also explain the problems with paraphrasing the examples of the POPC in chapter 4, section 2.2.2.1. In particular, it was found that in some constructions the *to*-infinitive is in competition with a **purposive to-PP**, which provided a felicitous paraphrase (cf. (4.36)–(4.37) with weak adjective *bryce*), whereas other examples could not be paraphrased in purposive terms (cf. (4.38) with strong adjective *nydbehefe*). We can now conclude that in the first case, the examples are of the characteristic-oriented type, whereas in the second case, they are of the activity-oriented type. Which type of expression the *to*-infinitive competes with in the second case, if any, remains a question for further research.

A further piece of evidence for the different syntactic structure of the two types of PACs relates to **preposition stranding**. As a general observation, linguists such as Maling (*apud* Allan 1980: 283, note 25), Koma (1981: 135, note 5), Van der Wurff (1990: 520), and Miller (2002: 215–217) have noted that there are no examples of *tough*-constructions (or object-raising constructions) with preposition stranding in Old English, i.e., "there was nothing like *they are easy to talk to*" (Miller 2002: 216). In the earliest data, preposition stranding was only found with object deletion constructions, such as in (5.7) below.

(5.7) Seo burg … wæs swiþe **fæger** an to locianne.
the city … was very beautiful at to look
'The city was very beautiful to look at.' (Or 2 4.74.11) (Fischer 1991: 154) (my glosses)

(5.8) þære readan eorþan dæl scafe þær to & þa stanas sint ealle swiðe
of.the of.red of.earth part shave.PRES.SUBJ there to and the stones are all very
gode of to drincanne wiþ eallum uncuþlicu þing.
good of to drink against all uncouth things
'You should shave thereto a portion of the red earth, and the stones are all very good to drink of/from, against all uncouth things.' (YCOE 940–960 Lch II (2) 64.3.2)

In example (5.7), the adjective *fæger* modifies an entity (*seo burg*), which has certain physical characteristics, rather than an activity. In fact, the extraposition paraphrase *it is beautiful to look at the city* not only is unfelicitous, it is even ungrammatical. Thus, (5.7) clearly is a characteristic-oriented construction. Example (5.8) equally involves the stranding of a preposition (*of*). The context suggests that *gode*, like *fæger* in (5.7), is used with characteristic-oriented meaning: the text is concerned with the medicinal qualities of a particular type of stone, which is good against stitches and flying venom. Another characteristic of the stone is that it is good to drink from against all strange calamities. So, in this example, *gode* also modifies an entity (*þa stanas*), rather than an activity. Structurally, it occurs in an object deletion construction which, in contrast to object raising constructions, allowed preposition stranding in Old English (Allen 1980: 283; Van der Wurff 1987). As the Old English examples of activity-oriented constructions in the data do not feature any stranded prepositions, the difference with regard to preposition stranding thus further supports the syntactic distinction between activity- and characteristic-oriented constructions.

The examples discussed above suggest that it is possible to make a **classification of adjectives** on the basis of whether they occur in activity-oriented and/or characteristic-oriented constructions. Three classes can be distinguished. Adjectives such as *fæger* ('beautiful') in (5.7), *pretty*, *delicious* or *soft* can only be used to modify entities, typically in terms of characteristics that can be perceived through the senses (cf. Minami 2003), and thus only occur in characteristic-oriented constructions. Adjectives such as *good* can be used to modify either entities, as in (5.6) and (5.8), or activities, as in (5.5). In general, all weak adjectives studied here can occur both in activity-oriented and in characteristic-oriented constructions (see also section 1.3). Finally, adjectives expressing necessity, or more generally, all strong adjectives studied here, always modify activities.[8] An example is given in (5.9).

(5.9) De pacientia. Hit cweð on þan godspelle, þurh eower geðyld ge
on patience. It says in the gospel, through your patience you
mugen habben eower sawle hæle. On eallen þæs mannes life geðyld
be.able.PRES.SUBJ have.INF of.your of.soul heal. In all of.the of.man life patience
is **neodðearflice** to habbene.
is necessary to have
'On patience. It says in the gospel: through your patience you can have your soul's heal. In all life of man, patience is necessary to have/be had.' (YCOE 1140–1160 Alc (Warn 35) 194–196)

In (5.9), *neodðearflice* ('necessary') is used with activity-oriented meaning, as it modifies the activity or rather state of having patience or being patient. The extraposition construction *it is necessary to have patience* is an adequate paraphrase and it illustrates the deontic flavour of the expression. The three types of adjectives thus distinguished are presented in Table 5.2 below. The table shows that in the PAC weak adjectives can be used in constructions that involve evaluative meaning (viz. characteristic-oriented constructions) as well as in those involving deontic meaning (viz. activity-oriented constructions), whereas strong adjectives can only be used in this last type. We can thus conclude that in the PAC the distribution of the adjectives is lexico-semantically determined in much the same way as in the extraposition construction (see chapter 1, section 2.2.3).

It should be noted, however, that the **type of evaluative meaning** involved in the characteristic-oriented construction is comparable, but not identical to that involved in non-modal evaluative ECs. In essence, the two types differ in terms of the level of clause structure at which they operate (Nuyts pc). This distinction presupposes a functional analysis of the clause (as proposed in Dik 1989, 1997ab; Hengeveld 1989, 1990; Siewierska 1991), more precisely as consisting of four levels or layers located in two

[8] *Necessary* can also modify states, especially the possession of things. *A knife is necessary to cut bread*, for example, can mean 'the possession of a knife is necessary to cut bread', but also 'the use

	Type of adjective	characteristic-oriented construction	activity-oriented construction
(1)	expressing qualities that can be perceived through the senses	x	
(2)	expressing goodness or fitness → weak adjectives	x	x
(3)	expressing necessity → strong adjectives		x

Table 5.2: A classification of adjectives in terms of their occurrence in characteristic-oriented and activity-oriented constructions

components.[9] The layers of the predicate and predication belong to the representational component, whereas the layers of the proposition and clause belong to the interpersonal component (Hengeveld 1989: 128–131). In fact, the type of evaluation involved in non-modal evaluative expressions operates at the propositional level, as the attitudinal source subjectively evaluates a propositional content involving a tensed SoA (see chapter 1, sections 2.2.2 and 2.2.3). As the source expresses his/her personal stance on the basis of SoA-external arguments, the type of subjectivity involved is semantic-interpersonal (De Smet and Verstraete 2006: 387) (see chapter 1, section 1.3.4), which ties in with the type of component the propositional layer is located in. The type of evaluation involved in characteristic-oriented constructions, by contrast, does not involve an attitudinal source, as it does not apply to a propositional content, but to a non-linguistic entity (e.g. the Renault range in (5.10) below). Moreover, the grounds on which the evaluation is made lie in the very characteristics of that entity, or, in other words, they are internal to that entity. All of this suggests that the type of meaning involved in characteristic-oriented constructions is not included in the conceptual map as it stands. To appreciate the status

of a knife is necessary to cut bread'.

[9] 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 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)

of this type, it may be useful to compare it to middle constructions, such as in (5.11) below.

(5.10) These are the characteristics that make this and the whole Renault range so **good to drive** and with low rate finance still available from Digbath's. (CB, ukspok)

(5.11) HYUNDAI took the wraps off their stylish and intriguing new Sonata in Turin. The high-spec four-door executive/family saloon will go on sale here by the summer. With prices starting at around <KPD> 14,000 they can't go wrong in their pitch at the company car market. And it should **drive well** too - Lotus are responsible for its ride and handling. (CB, sunnow)

In (5.10), a type of Renault is said to be good to drive, and in (5.11), a type of Hyundai is expected to drive well (with Lotus being involved). In both cases, the evaluation seems to apply to a non-linguistic entity, viz. a type of car, which is assessed in terms of its driving properties. In particular, in the middle construction in (5.11), the adverb *well* expresses a judgement related to the characteristics or qualities of the subject entity (Kemmer 1993: 147), viz. the new type of Hyundai, which can be interpreted as "lending itself to and being positively conducive to the act designated by the lexical verb," viz. *drive* (Davidse and Heyvaert 2007: 62). Although the middle construction as such has a modal flavour, which can be captured by the force-dynamic relation of "letting" (Davidse and Heyvaert 2007: 56–62), the evaluative adverb *well* in (5.11) seems to function as a manner adverb at predicate level (or as 'manner satellite' in Functional Grammar, cf. Hengeveld 1989: 151; Dik et al. 2005: 174–175). In this sense, it functions at the representational or ideational level of the utterance (Dik et al. 2005: 173), and, in terms of the typology of subjectivity proposed by De Smet and Verstraete (2006), it expresses semantic-ideationally subjective meaning. Although not all examples of the characteristic-oriented construction given so far can be felicitously paraphrased by a middle construction (e.g., (5.6) as **that tree eats well*), we may nevertheless conclude that the type of evaluative meaning involved in characteristic-oriented constructions differs from that in non-modal evaluative ECs in terms of the level of clause structure at which it operates. Hence, it also differs in terms of the presence of an attitudinal source and the type of subjectivity. The type of meaning involved in the characteristic-oriented construction, then, is not included in the conceptual map.

In conclusion, it has been shown that the constructions that are traditionally analysed as *tough*-constructions actually include two types, viz. activity-oriented and characteristic-oriented constructions, with distinct semantic and syntactic properties. In particular, the two types involve a different relation between matrix adjective and complement: the first type is a predicand construction with the adjective being predicated of the *to*-infinitive, whereas the second type is a non-predicand construction, with the adjective being predicated of the NP designating a non-linguistic entity. In this type, the *to*-infinitive specifies in which regard or for which purpose the evaluation holds. Importantly, it was found that the adjectives studied also differ in their distribution across the two types of construction. Weak adjectives occur both in the evaluative characteristic-oriented construction and in the deontically flavoured activity-oriented construction, whereas strong

adjectives occur in the last type only. This is actually similar to my analysis of extraposition constructions, where I have argued for a distinction within the domain of deontic modality as defined in Nuyts et al. (Forthcoming). We can conclude that the lexico-semantic and conceptual distinctions at work in the extraposition construction are also seen at work in the post-adjectival *to*-infinitive construction, although the evaluative meaning involved in the characteristic-oriented construction distinguished here does not function at the same level of clause structure as non-modal evaluation discussed in chapter 1. All in all, this study thus adduces cross-constructional evidence in support of the conceptual map.

1.3 The types of clausal complement: The explanation of voice contrasts

In this section, I will show that the distinction between characteristic-oriented and activity-oriented constructions can be used to explain the development of the types of clausal complement, or, more specifically, the distribution of voice contrasts in post-adjectival infinitives. I will first outline the development of voice contrasts as such, in section 1.3.1, and I will then use the distinction between the two construction types to explain the distribution of voice contrasts, in section 1.3.2. In the explanation, I will contrast the weak adjectives *good* and *fit* with the strong adjective *necessary*. As *necessary* invariably occurs in the activity-oriented construction, voice contrasts do not imply a difference in meaning. For *good* and *fit*, however, a clear tendency will be shown for activity-oriented uses to be construed with a passive infinitive, and for characteristic-oriented uses to be construed with an active infinitive. In these cases, voice contrasts will be argued to be semantically conditioned, rather than in free variation.

1.3.1 The rise and spread of the passive to*-infinitive*

In chapter 4, section 2.2.2.1, it was pointed out that the POPC probably constitutes one of the environments in which the *to*-infintive originally occurred, because it is in competition with purposive *to*-PPs, especially in the characteristic-oriented constructions. Even if the majority of the twenty examples found in the YCOE occur in translations of Latin texts, the post-adjectival infinitive construction investigated in this study is in fact of native stock, as shown by Bock (1931), Fischer (1991: 155), and Van linden (2006). Likewise, Van der Gaaf (1928b: 130), Visser (1972: §939–940, §943–944), and Mitchell (1985a: 928–931) do not mention any Latin influence in their descriptions. As detailed in chapter 4, section 2.2.2.1, the construction requires a dative-inflected infinitive preceded by *to* in Old English, which was only available in the active voice. Confirming this, all the examples found pattern with an active *to*-infinitive, as in (5.5) to (5.9) above (see also (4.36) and (4.38) in chapter 4, section 2.2.2.1). The passive infinitive in Old English is invariably a **bare infinitive** without *to*, consisting of a passive auxiliary (*beon*, *wesan* or *weorþan*) and the past participle, which may or may not be inflected (Mitchell 1985a: §786; Fischer 1991: 143). It is only found after the precursors of the modals (e.g., *cunnan*, *dearr*,

magan, *mot*, *sculan*, *ðurfan* and *willan*)[10] (Callaway 1913: 83–87; Van der Gaaf 1928a: 108–109). An example is given in (5.12).

(5.12) and he ne mot na beon eft gefullod.
and he not may never be[.INF] again baptised.
'and he may never be baptised again' (ÆLS (Ash Wed) 141) (Fischer 1991: 143)

Other infinitival constructions that are construed with passive infinitives in Present-day English, however, are found with active inflected infinitives in Old English, as for example in purposive adjunct clauses, accusative-and-infinitive-constructions, and as a complement of the verb *to be*, as in, for instance, *þas þing sint to donne* (Fischer 1991: 147) (Callaway 1913: 97; Van der Gaaf 1928a). For the PAC studied here, some examples, such as (5.9), can also be used with a passive infinitive in PDE. To explain the use of formally active infinitives in the Old English equivalent constructions, it has been argued that the Old English inflected infinitive can be both active and passive 'in sense'. This idea of **dual voice** or voice neutrality has been put forward by, for instance, Callaway (1913: 6), Van der Gaaf (1928ab), and Van der Wurff (1987, 1990). By contrast, Bock (1931: 200ff) and Fischer (1991, 1992) convincingly argue that there are good reasons to interpret these infinitives as "truly active within the grammatical system in which they function" (Fischer 1992: 326).

Regardless of one's position on OE, the situation changed in Middle English, when the language underwent a typological shift, with the rise of SVO-order in both main clauses and subclause. Together with the development of an obligatory subject, this caused the relation between subject and verb to become primary, whereas in Old English it was the relation object-verb that was primary (Strang 1970: 345–349). The example Fischer gives, repeated in (5.13) below, may clarify her point.

(5.13) Scipia het ealle burg towearpan (Or. 4 13.212.19) (Fischer 1992: 327).
Scipio commanded all town destroy.INF (my glosses)

In Old English, which is still SOV,

> *ealla burg* would be interpreted as the object of the infinitive, and therefore an active infinitive – in form as well as sense – is appropriate ['Scipio commanded to destroy the whole town']; in Middle English, a SVO-language, the same phrase would be interpreted as subject of the infinitival complement and so a passive infinitive is to be expected ['Scipio commanded the whole town to be destroyed']. (Fischer 1992: 327–328)

[10] Fischer (1991: 160) also mentions one often-cited example of the (bare) passive infinitive after the adjective *wurðe*. Furthermore, the passive infinitive is infrequently found with accusative-and-infinitive-constructions, and with impersonal verbs, but only in cases that are direct translations of Latin passive constructions.

In other words, the typological change in Middle English and the concomitant change in primary verb-argument relation caused a systematic gap in the syntax, which was filled by the passive *to*-infinitive in the course of the Middle English period.

In the Late Middle English period, the first examples of a passive post-adjectival *to*-infinitive show up in the corpus data. Van der Gaaf (1928b: 133–134), Visser (1972: §940), and Fischer (1991: 161) note that more and more adjectives appear with a passive *to*-infinitive towards the end of the fourteenth century. Of the eighteen examples with a post-adjectival infinitive found in Late Middle English (1350–1500), the only two with a passive infinitive are given below.

(5.14) And this ilke ordre constreyneth the fortunes and the dedes of men by a bond
And this sameorder constrains the fortunes and the deeds of men by a bond
of causes nat **able** to ben unbownde.
of causes not proper to be unbound
'And this same order [put forth by the divine thought, AVL] constrains the fortunes and the deeds of men by a bond of causes, not proper to be unbound.' (PPCME ?*a*1425(*c*1380) Chaucer Bo. (Benson-Robinson) 452.C1)

(5.15) Þan þe Meyr alto-rebukyd hir & rehersyd many repreuows wordys &
Then the mayor altogether.rebuked her and rehearsed many disgraceful words and
vngoodly, þe whiche is mor **expedient** to be concelyd þan expressyd.
wicked, the which is more expedient to be concealed than expressed
'Than the mayor rebuked her altogether and rehearsed many disgraceful and wicked words, which is more expedient to be concealed than expressed.' (PPCME *a*1438 MKempe A 115)

In keeping with Fischer (1991: 177), we can note that the adjectives in (5.14) and (5.15) are Romance loans. More particularly, Fischer suggests a double reason for the spread of the post-adjectival passive *to*-infinitive. On the one hand, Late Middle English is the period in which (native) **eager-type adjectives** appear with passive *to*-infinitives.[11] As the syntactic subject of such *eager*-constructions is the logical subject of the infinitive (see chapter 4, section 2.2.2.1), this form has to be passive when passive in sense.[12] In (5.16), for instance, the adjective *ready* ('willing'; *eager*-sense) is predicated of a human subject, and occurs with both a passive and an active infinitive. This increase of passive infinitives "may have promoted the use of the passive infinitive after *easy*-adjectives (including the adjectives studied here), where the passive infinitive was not strictly necessary" (Fischer 1991: 177).

[11] Fischer (1991: 163) notes that in Old English, "passive sense could be expressed in their case presumably only (I have found just one example, after *gemyndig*, in PPs 118.52) by means of a passive subclause."

[12] Note that in earlier stages of English, the *eager*-type adjectives only occurred with active *to*-infinitives, as illustrated with *gearu* in chapter 4, section 2.2.2.1, example (4.40). In addition, this type of adjectives could occur with purposive *to*-PPs and subjunctive *that*-clauses (Los 2005: 172 (39 a–c)).

(5.16) Y am **redi**, not oonly to be bounden, but also to die.
I am ready, not only to be bound, but also to die
'I am ready/willing, not only to be bound, but also to die.' (1388, Purvey, *Acts* XXI. 13) (Van der Gaaf 1928b: 133)

On the other hand, the Late Middle English and Early Modern English period witness an influx of **Romance loans**, which could be used both as *easy*- and as *eager*-type (cf. *tough*) adjectives. In their source language, adjectives such as *profitable* or *convenient* can be conceptualized in two ways; they can mean 'able', 'competent' or 'properly qualified' when conceptualized from the point of view of the person or thing that possesses it (i.e., the 'active' sense), or 'useful', 'proper', when conceptualized from the point of view of the effect produced (i.e., the 'passive' sense) (Fischer 1991: 177–178).[13] They retained this double-handled nature after they were borrowed into English, and even affected some native adjectives, which blurred the distinction between *easy*- and *eager*-type adjectives.[14] Fischer argues that "this situation may have given rise to ambiguities especially when the subject was animate" (1991: 178–179). It can be noted that Fischer's actual examples are not very helpful, as they all involve inanimate subjects. An example with an animate subject is given in (5.17).

(5.17) [N]otwithstanding their Corruptions they may still retain the true Essence of a Church: as a man may be truly and really a man, though he have the plague upon him; and for that reason be **fit** to be avoided by all that wish well to themselves. (PPCEME 1680 Tillotson, *Scoffing at religion*)

In (5.17), *fit* is used in its *easy*-sense, but has an animate subject. The passive infinitive makes it explicit that the intended meaning is not 'a man who has the plague on him is properly qualified to avoid (something)', but rather 'it is fit/proper to avoid a man who has the plague on him'. In many cases the context helps to disambiguate the meaning of the adjective. In the corpus data, however, the majority of passive infinitives with human subjects occur with adjectives that are still used in their *eager*-sense, as in (5.18) below.

(5.18) But since the case is so, I will beg your leave to lay before you, in as few words as possibly I can, the names and pretences of the several persons who have been hitherto proposed to mee as **proper** to be recommended to your Ma=ty= [Majesty, AVL] for that employment. (PPCEME 1697 Somers, *Letter to King*)

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[13] Likewise, Greenough and Kittredge (1902: 272) explain that the Latin word *opinio* "means both *opinion* (from the point of view of him who *has* it) and *reputation* (from the point of view of him concerning whom it is held)."

[14] Note that by including adjectives such as *profitable* or *fit* in the category of *eager*-type adjectives, Fischer (1991) groups together adjectives that can be used in subject-control *to*-infinitival constructions, but which do not necessarily refer to the intentions of the subject like the prototypical adjective *eager* does. In fact, the adjectives studied here always imply an evaluation of a third party instead of subject-oriented intention. This is why the distinction between activity- and characteristic-oriented constructions is taken to apply here to animate subjects as well.

Because of their role in the development of the passive infinitive with the '*easy*-adjectives' studied here, I will also discuss post-adjectival constructions with animate subjects in the next sections. Therefore, the analysis will not be restricted to object raising and object deletion constructions. However, it should be noted that the distribution of active and passive infinitives in PACs with animate subjects differs from that with inanimate subjects, in that in characteristic-oriented constructions, passive infinitives are passive in sense, as in (5.18) above and (5.36) below, while active infinitives are active in sense (cf. (5.38) below). This means that only in activity-oriented constructions as in (5.17) can the data with animate subjects tell us something about the correlation between the type of construction and the clausal voice type of the infinitive.

Finally, although Fischer (1991) offers a double explanation for the spread of the passive *to*-infinitive in PACs, she does not indicate the token frequency of the passive form for the various types of adjectives that may occur in the construction. Nor does she give any information on the ratio of active versus passive forms. Rissanen (1999: 289) notes that the active forms remain the more common variant in Early Modern English, but he does not specify which semantic types he looked at (the example he gives is *harde*, expressing the degree of difficulty of an activity). For the Late Modern English period, Fischer notes that by this time, most of the borrowed Romance adjectives had lost their double-handled nature, and had become either an *eager*- (e.g., *able*) or an *easy*-type adjective (e.g., *convenient*) (Fischer 1991: 179). The distinction between the two types of adjective had thus become relatively clear again, which in Fischer's (1991: 179) view, resulted in a decrease of passive infinitives which were not semantically necessary. Denison (1998: 185) argues that in the case of the post-adjectival infinitive

> it is generally the active rather than the passive which has triumphed. It has the advantage of being parallel to patterns in which the subject of the infinitive is expressed in a *for*-construction, and a passive infinitive is ruled out.

Neither author gives frequencies of occurrence, or distinguishes between types of adjectives, or types of constructions. In the following section I will present the results of my corpus study, and I will argue that the distinction between activity-oriented and characteristic-oriented meaning can be used to explain the variation in voice type in the Early Modern, Late Modern and Present-day English period.

1.3.2 Activity-oriented and characteristic-oriented meaning in Modern English

As pointed out in section 1.2, the distinction between the modally flavoured activity-oriented and purely evaluative characteristic-oriented construction dates from the Old English period. The data show that up to the Late Middle English period both constructions appear with the same type of clausal complement, viz. an active *to*-infinitive. The first two examples with a passive infinitive, presented above in (5.14) and (5.15) and repeated here as (5.19) and (5.20), set the scene for the Modern English period.

(5.19) And this ilke ordre constreyneth the fortunes and the dedes of men by a bond
And this sameorder constrains the fortunes and the deeds of men by a bond
of causes nat **able** to ben unbownde.
of causes not proper to be unbound
'And this same order [put forth by the divine thought, AVL] constrains the fortunes and the deeds of men by a bond of causes, not proper to be unbound.' (PPCME ?*a*1425(*c*1380) Chaucer Bo. (Benson-Robinson) 452.C1)

(5.20) Þan þe Meyr alto-rebukyd hir & rehersyd many repreuows wordys &
Then the mayor altogether.rebuked her and rehearsed many disgraceful words and
vngoodly, þe whiche is mor **expedient** to be concelyd þan expressyd.
wicked, the which is more expedient to be concealed than expressed
'Than the mayor rebuked her altogether and rehearsed many disgraceful and wicked words, which is more expedient to be concealed than expressed.' (PPCME *a*1438 MKempe A 115)

In these examples, the context suggests that the adjectives *able* (in the sense of 'proper') and *expedient* modify activities rather than entities. For both, an extraposition construction gives an adequate paraphrase; (5.19), for instance, means *it is not proper to unbind the (divine) bond of causes*. In the Late Middle English period, active infinitives are still found in both activity- and characteristic-oriented constructions, but it is telling that the first passive infinitives appear in constructions with activity-oriented meaning. In what follows, I will concentrate on the development of the two types of clausal complements, and I will discuss the variation of voice type in post-adjectival constructions in the Modern English periods. As indicated above, the discussion will focus on the weak adjectives *good* and *fit*, which are contrasted to the strong adjective *necessary*.

1.3.2.1 Early Modern English

In the Early Modern English period, a clear tendency can be noted for activity- and characteristic-oriented uses to become syntactically differentiated in formal terms.[15] In particular, **weak adjectives** tend to appear with a passive infinitive when occurring in an activity-oriented construction, such as the Late Middle English examples (5.19) and (5.20) above, and with an active infinitive when occurring in a characteristic-oriented construction. Two activity-oriented uses, construed with passive infinitives, are given below.

(5.21) the saide Justices of or neere the saide Countie, or any two of them, shall or may taxe and assesse the Inhabitant~ of the Countie within five miles of the saide place infected, at such reasonable weekelie Taxes and Rates as they shall thinke **fit** to be levied by Warrant from any such two Justices of Peace. (PPCEME 1603–1604 *Statutes* IV)

[15] Note that in Old English there was one formal property that distinguished between activity- and characteristic-oriented constructions, at least in some cases, viz. the possibility of preposition-stranding (see section 1.2). In Middle English, however, *tough*-constructions, or object-raising constructions, also allowed for P-stranding (Van der Wurff 1990: 522), which made the two types of constructions formally indistinguishable.

(5.22) and no Objection of Novelty ought to take place against that which upon all accounts was so **fit** and **necessary** to be done. (PPCEME 1680 Tillotson, *Scoffing at religion*)

In the examples (5.21) and (5.22), *fit* modifies activities rather than entities. For both expressions, an extraposition construction yields an adequate paraphrase, such as *they shall think it fit to levy weekly taxes* for (5.21). It can also be noted that the constructions have a deontic meaning: they express the desirability of the activities involved. Thus, the meaning of these examples is different from that of the following characteristic-oriented examples, which pattern with active infinitives.

(5.23) and so turne it vpon the brine which comes from the salt two or three daies or more, according to the bignesse of the cheese, and then lay it vpon a faire table or shelfe to drie, forgetting not euery day once to rubbe it all ouer with a cleane cloth, and then to turne it til such time that it be throughly drie and **fit** to goe into the presse (PPCEME 1615 Markham, *Country Contentments*)

(5.24) If they shoot up tall after they are molded, you had best top them at a convenient height, it will make them grow the more in bigness, and so be sooner **fit** to graff. (PPCEME 1696 Langford, *Fruit Trees*)

In (5.23) and (5.24), the meaning of *fit* can be described as 'ready after a process of internal change', such as the drying of cheese in (5.23) or the growing of shoots in (5.24). Extraposition paraphrases do not produce the intended meaning (e.g., (5.24) as **It is fit to graft the shoots*). Rather, the adjectives describe the characteristics of the entities involved, and evaluate them as fit for the purpose of or with regard to a particular activity.

An attempt to explain the different syntactic behaviour of characteristic-oriented and activity-oriented constructions can start from the examples presented above. Example (5.23) is the only case in which *fit* is used with an intransitive infinitive, with the syntactic subject coinciding with the logical subject of the infinitive. As, in addition, the subject is inanimate, the expression itself is not included in Table 5.3 below. However, the fact that its meaning is very similar to those cases in which the syntactic subject is actually the logical object of the infinitive (as in (5.24)) confirms that in characteristic-oriented constructions the relation between the subject and the matrix adjective is primary, with the infinitive 'merely' specifying in which regard the evaluation holds. In activity-oriented uses, by contrast, it is the relation between the syntactic subject and the infinitive that is most prominent (with the subject understood as the (prepositional) object of the infinitive), and together these form the logical subject of the matrix adjective. The passive infinitive emphasizes this object-verb relation. Much in the same vein, Fischer (1992: 338–339) argues that the use of the passive infinitive with adjectives expressing ease or difficulty "emphasises the adverbial reading of the adjective, while the adjective itself remains morphologically an adjective." In an adverbial reading, it is indeed the activity that is focused on, rather than the characteristics of the subject. In the case of active infinitives,

the relation between the syntactic subject and adjective is more prominent (Fischer 1991: 172), much like in the characteristic-oriented examples.[16]

As mentioned above, the variation of voice type is meaningful for weak adjectives, but not so much for **strong adjectives**, as these invariably occur in activity-oriented constructions. In example (5.22) above, *necessary* was found with a passive infinitive. In the example below, it is construed with an active form, but without a difference in meaning. Again, the extraposition paraphrase gives the intended meaning (*It were necessary to know how to plough for peas and beans*), and the construction has a deontic flavour.

(5.25) Howe to plowe for pees and beanes, were **necessarye** to knowe (PPCEME 1534 Fitzherbert, *Husbandry*)

The considerable number of passive infinitives with *necessary* (see Table 5.4 below) may be explained as 'being promoted' by the passive forms following *eager*-type adjectives (Fischer 1991: 177), but it should be noted that they were never used to disambiguate between *eager-* and *easy*-senses, as *necessary* is never predicated of animate subjects (unlike *good* and *fit*). As another explanation, *necessary* might have been influenced by a semantically similar construction without an adjective, viz. the predicative *to be to*-construction (see section 1.3.1). This construction expressing obligation or necessity[17] also came to be used with a passive *to*-infinitive in the Late Middle English period (Van der Gaaf 1928a; Fischer 1991: 146–151), giving, for example, PDE *these things are to be done* for OE *þas þing sint to donne* (Fischer 1991: 147 (9a)). It should be noted, though, that unlike in the case of *necessary* with infinitive, the passive *to*-infinitive became the established form with semi-modal *be* due to the typological shift to SVO-order (see section 1.3.1), "except in a few idiomatic phrases like *he is to blame*, *the house is to let*" (Fischer 1992: 337). In this sense, the construction became also formally distinct from the *to be to*-construction expressing future or purpose, as in *he is to come next week*, which was not yet attested in Old English, but became more frequent in the course of the Middle English period (Fischer 1992: 336).

In conclusion, the distinction between activity-oriented and characteristic-oriented meaning can be argued to be useful in explaining the variation in clausal voice type for the weak adjectives *fit* and *good* in Early Modern English. The data, summarized in Table 5.3, show that the passive infinitive was typically used in deontically flavoured constructions with activity-oriented meaning, whereas the active infinitive tended to be retained in the evaluative cases with characteristic-oriented meaning.

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[16] It should be noted, however, that Fischer (1991; 1992) does not attach any syntactic consequences to the voice contrast with post-adjectival infinitives: she sticks to an object raising analysis for both constructions.

[17] Apart from the meaning of 'obligation', 'duty' or 'necessity', Bock (1931: 199) and Fischer (1991: 149) also mention that of 'possibility' or 'likelihood' for the predicative *to be to*-construction, especially in Old English. In the course of the Middle English period, the deontic meaning becomes the most frequent one (Fischer 1991: 150).

Adjective	total	animate subject:				inanimate subject			
		characteristic		activity		characteristic		activity	
		A	P	A	P	A	P	A	P
fit	288	18	9	0	2	3	5 *of* NP 1	1	15
good	2,438	-	-	-	-	7	1 *of* NP 1	0	1
necessary	802	-	-	-	-	-	-	1	20

Table 5.3: The EModE results for *fit*, *good* and *necessary* (PPCEME) (A: active; P: passive infinitive)

As the constructions with animate subjects have been discussed in section 1.3.1, this section has focused on the constructions with inanimate subjects. It is clear from the table that the voice preferences of the semantic types distinguished are tendencies rather than absolute rules. More specifically, the data include one example with activity-oriented meaning and an active infinitive, and eight characteristic-oriented or ambiguous examples with a passive infinitive; these are included in Table 5.3 as characteristic-oriented examples with passive infinitives.[18] Finally, it should be noted that the non-occurrence of *good* followed by an infinitive with animate subjects is mere coincidence. In the data, *good* is found modifying animate nouns, such as *fellow*, *knight* and *lady*, but not with a post-adjectival infinitive. *Necessary*, however, is never predicated of an animate subject and cannot express characteristic-oriented meaning, as it can only modify activities (see section 1.2). Its empty cells in the table thus indicate structurally impossible constructions, rather than coincidences.

1.3.2.2 Late Modern English

The tendencies described for the Early Modern English period become even more pronounced in the Late Modern English period, as is shown in Table 5.4 below. By this time the distinction between the *eager*- and *easy*-class of adjectives had become rather clear-cut again,[19] which in Fischer's (1991: 179) view yielded a reduction of passive infinitives that were not semantically necessary, i.e. infinitives with *easy*-adjectives (see section 1.3.1). The data for *necessary* confirm Fischer's findings, in that relatively more active infinitives are found than in the Early Modern English period. For *fit* and *good*, however, clausal voice type has become meaningful; therefore these adjectives need not comply with the overall decline of post-adjectival passive *to*-infinitives. A few examples with **inanimate** subjects are given below.

[18] I refer to Van linden (2008a: 253–254) for more details on the counterexamples and the ambiguous cases in Early Modern English. In Table 5.3, the label '*of* NP' refers to examples with a passive infinitive and an *of*-PP specifying the agent of the infinitive, as in (i) below.

(i) They [i.e. walnuts, AVL] are euell for them that haue the coughe. They are **fit** to be taken fastinge of them that woulde vomite. (PPCEME 1562 Turner, *A new herball*)

[19] In Late Modern English, adjectives such as *able* and *competent*, for instance, have become restricted to human referents; they are not predicated of inanimate subjects anymore.

Adjective	total	animate subject:				inanimate subject			
		characteristic		activity		characteristic		activity	
		A	P	A	P	A	P	A	P
fit	951	149	8	0	7	37	7	0	19
good	530	0	1	0	0	17	0	0	2
necessary	1,479	-	-	-	-	-	-	14	37

Table 5.4: The LModE results for *fit*, *good* and *necessary* (CLMETEV) (A: active; P: passive infinitive)

(5.26) [T]he language of nature variously modified and corrupted by passions, prejudices, and habits; the language of simulation and dissimulation: very hard, but very **necessary** to decipher. (CLMETEV 1750 Chesterfield, *Letters to his son*)

(5.27) I have hitherto, my lords, confined myself to the consideration of one single article of this complicated charge, because it appears to me to be the only part of it **necessary** to be examined. (CLMETEV 1740–1741 Johnson, *Parliamentary debates* (Vol. 1))

(5.28) In a Month's time, if the Vessel holds about eight Gallons, it will be fine and **fit** to bottle, and after bottling, will be **fit** to drink in two Months: but remember, that all Liquors must be fine before they are bottled, or else they will grow sharp and ferment in the Bottles, and never be good for any thing. (CLMETEV 1732 Bradley, *The country housewife and lady's director*)

(5.29) The two young men came on, in earnest and vehement conversation; but the subject they were on was a terrible one, and hardly **fit** to be repeated in the face of a Christian community. (CLMETEV 1824 Hogg, *Private memoirs and confessions of a justified sinner*)

(5.30) Close by I saw the wild arum, the roots of which, when well baked, are **good** to eat, and the young leaves better than spinach. (CLMETEV 1839 Darwin, *The voyage of the Beagle*)

(5.31) This Marmalade is **good** to be serv'd in Glasses as a Sweet-meat in Desert, or to be put into Coffins for Tarts, or to be brought upon the Table in Saucers among the other Sweet-meats in a Desert. (CLMETEV 1732 Bradley, *The country housewife and lady's director*)

These examples illustrate the different semantic-syntactic behaviour of *necessary* as opposed to the weak adjectives. Examples (5.26) and (5.27) with *necessary* differ in terms of clausal voice type, but at the same time they both have an activity-oriented meaning and they are adequately paraphrased by an extraposition construction (e.g., for (5.27), *it appears necessary to me to examine only this part*). In the examples with *fit* and *good*, however, the difference in voice type correlates with a difference in meaning. In examples (5.28) and (5.30), which contain active infinitives, the adjectives clearly evaluate the characteristics of the inanimate subjects for the purpose of or with regard to an activity (bottling and drinking in (5.28), and eating in (5.30)). Example (5.29) with a passive infinitive, by contrast, has a deontic meaning, which can be described as 'it is hardly fit to repeat the subject in the face of a Christian community'. Rather than assessing the internal characteristics of a certain substance, *fit* assesses the (non-)desirability of a particular activity. As for example (5.31), which also has a passive infinitive, I think both a characteristic-oriented and an activity-oriented reading are possible. A weak deontic modal meaning fits in with the context of the example: it is taken from a cookery book. In this

sense, the author intends to give the advice to serve the marmalade in glasses as a dessert, to put it into the crust of a pie, and so on. Nevertheless, a purely evaluative meaning may also be possible, with *good* assessing the characteristics of the marmalade as regards serving as a dessert, for instance. In the latter reading, *good* does not comply with the suggested tendency, that is to say, it is used with characteristic-oriented meaning, but construed with a passive infinitive. Since I have also found seven examples of *fit* with this combination of form and meaning (see Table 5.4 above), we are led to conclude that the passive infinitive still occurred with characteristic-oriented meaning, even though it is clearly the non-preferred option. Some deviating examples are given below.

(5.32) There is now the Skerret **fit** to be eaten; it is a very nourishing and pleasant Root, and is prepared in the following manner for the Table. (CLMETEV 1732 Bradley, *The country housewife and lady's director*)

(5.33) The men, like demons, in their fire-and-soot colouring, stood swart around, awaiting the moment when the tons of solid iron should have melted down into fiery liquid, **fit** to be poured, with still, heavy sound, into the delicate moulding of fine black sand, prepared to receive it. (CLMETEV 1848 Gaskell, *Mary Barton*)

These examples do not have a deontic meaning; yet they are construed with a passive infinitive. According to Quirk et al. (1985: 1229), *fit* in fact belongs to a set of adjectives such as *free*, *ready* and *available*, which appear in constructions in which the main clause subject is identified with the logical object of the infinitive, but for which the extraposition paraphrase does not hold. Further, they state that "we can generally (a) omit the infinitive clause, or (b) substitute a passive infinitive clause without change of meaning" (1985: 1229). I have tested these remarks on a small-scale corpus study of *ready* combined with active or passive infinitives in the COBUILD corpus, which yielded the following results.[20]

Verb	total	animate subject	inanimate subject (food items)		
		active inf	active inf	passive inf	ready-to-eat/serve (prenominal use)
eat	27	5	8	1	13
serve	28	17	8	2	1

Table 5.5: *Ready* with *eat* and *serve* in CB

(5.34) This evening's meal was **ready** to be served. Everything was clean, bright, ready. (CB, ukbooks)

(5.35) It's just a vegetable risotto which has been on for about four to six hours so that would be **ready** to serve and it does smell lovely. (CB, ukspok)

[20] The queries used in CB are [ready+3TO+eat], [ready+3TO+be+eaten], [ready+3TO+serve], and [ready+3TO+be+served], with 3 indicating that zero to three words are allowed between *ready* and *to*.

The results in Table 5.5 show that passive infinitives can be used with inanimate subjects, but the active forms are preferred. The examples suggest that there is not really a difference in meaning. It can be argued that the same situation holds for the characteristic-oriented uses of *fit* and *good* in the Early and Late Modern English period: they are construed with both active and passive infinitives, but the active form is clearly the preferred option.

So far, the discussion has focused on inanimate subjects. The weak adjectives also appear with **animate** ones, with both active and passive infinitives. The active infinitives always involve the characteristic-oriented sense of 'properly qualified' or 'having the proper characteristics' (see section 1.3.1), whereas the passive infinitive may involve either characteristic-oriented or activity-oriented meaning. Consider the following examples.

(5.36) I did all I could to dissuade him from going to the wars: I told him there were men enow that were **good** for nothing else but to be killed, that had not the love of such fine ladies. (CLMETEV 1749 Fielding, *The history of Tom Jones, a foundling*)

(5.37) That man is vile and **fit** to be trampled on, who cannot count his future in gold and victory. (CLMETEV 1870 Meredith, *The adventures of Harry Richmond*)

(5.38) Robert, the eldest, was a wild, rude, thoughtless youth; but he fancied himself **fit** to govern Normandy, and asked his father to give it up to him. (CLMETEV 1873 Yonge, *Young folk's history of England*)

In (5.36), which is construed with a passive infinitive, the lady does not mean that it is good to kill men that do not have the love of fine ladies (activity-oriented meaning), but rather that there are men who are useless and therefore only good to be killed (characteristic-oriented meaning). In (5.37), the extraposition construction presents an adequate paraphrase: *it is fit to trample on that man, who cannot count his future in gold and victory*. Hence, in this case the passive infinitive occurs in a structure with activity-oriented meaning. Finally, in (5.38), which is construed with an active infinitive, *fit* has characteristic-oriented meaning: Robert thinks he has the proper qualities to govern Normandy.

In summary, the tendencies observed for the weak adjectives in the Early Modern English period have become stronger in the Late Modern English period. This is particularly the case for the activity-oriented uses, which are all construed with a passive post-adjectival infinitive. For the characteristic-oriented uses, a clear preference can be noted for the active infinitive, but the passive infinitive is attested as well. It was noted that this situation is similar to that of adjectives such as *ready* in Present-day English, which can be used with either an active or passive infinitive without a difference in meaning. In addition, the same goes for the activity-oriented uses of the adjective *necessary*. It is found with both active and passive infinitives (cf. Table 5.4) without a difference in meaning (cf. (5.26)–(5.27)), but the passive infinitive, which is paired with activity-oriented meaning in the case of weak adjectives, seems to be preferred.

1.3.2.3 Present-day English

In the Present-day English data, there are surprisingly few tokens of the relevant constructions, as can be seen in Table 5.6. Especially the activity-oriented uses have become few; the characteristic-oriented uses with inanimate subjects occur only with *good*. Nevertheless, the data confirm the tendencies sketched above, as can be seen in examples (5.39) to (5.45).

Adjective	total	animate subject:				inanimate subject			
		characteristic		activity		characteristic		activity	
		A	P	A	P	A	P	A	P
fit	42	10	1	-	-	-	-	-	-
good	2,760	9	0	0	0	41	0	0	1
necessary	1,325	-	-	-	-	-	-	2	3

Table 5.6: The PDE results for *fit*, *good* and *necessary* (CB) (A: active; P: passive infinitive)

(5.39) Now, rather than state directly that she won't relate a dream or engage in defensive dissimulation, she skips out at the end of a session as if 'school's out!' and any challenge posed too close to 'the bell' is not **necessary** to answer. (CB, usbooks)

(5.40) I've almost run out of time but there's one thing a feature which is common to all of Shakespeare's er plays but has a special part in the tragedies which I feel is **necessary** to be at least stated. (CB, ukspok)

(5.41) Anderton said: 'I'm **fit** and ready to play but it doesn't look like I figure in the manager's plans. It's very frustrating. (CB, sunnow)

(5.42) Setting snares required a certain expertise, not to mention the state of the rabbit when you went back a few days later, still alive but **fit** only to be killed, and you meanwhile hanging onto the heather for dear life. (CB, ukbooks)

(5.43) They [i.e. students, AVL] were [...] they were very motivated and. They were were they. Mm. very very very **good** to relate to. (CB, ukspok)

(5.44) These are the characteristics that make this and the whole Renault range so **good** to drive and with low rate finance still available from Digbath's. (CB, ukspok)

(5.45) But it is good that we have series like As Time Goes By in which older people get a chance. After all, it happens in real life. Why not? It's **good** not to be passed over. (CB, today)

Examples (5.39) and (5.40) are similar to (5.26) and (5.27) in that they both involve activity-oriented meaning, but a different voice type.[21] Examples (5.41) and (5.42) have animate subjects, which are the logical subjects of the infinitives. In the ten cases containing *fit* with an active infinitive in the data, *fit* means 'physically fit', and it is often coordinated with semantically cognate adjectives, such as *able*, *healthy* and *ready* as in (5.41). Example (5.42) with a passive infinitive is comparable to (5.36); after being trapped into a snare for a few days, the rabbit has become worthless and therefore only fit

to be killed. We can thus conclude from the examples that *fit* has preserved only characteristic-oriented meaning in Present-day English, with the animate NPs functioning as logical subjects of the *to*-infinitives. For *good*, both types of construction are attested in the data. The most frequent type is the characteristic-oriented use with inanimate subjects and active infinitives, such as in (5.44). The least frequent type is the activity-oriented use with inanimate subjects and passive infinitives; in fact, (5.45) is the only example found in the data, with the subject *it* referring to a proposition given earlier in discourse. It may be paraphrased as follows: *It is good not to pass over older people appearing in television series*. Finally, *good* is found nine times with animate subjects, such as in (5.43). It should be noted, however, that the infinitives are all active, while the syntactic subjects are not the logical subjects of the infinitives (as with *fit* in the CB data and various adjectives in earlier periods, cf. (5.18)), but rather the logical objects or the NP of the prepositional object, as in (5.43).

Clearly, the post-adjectival infinitive has become marginal in Present-day English, at least for the adjectives investigated here. For *necessary*, the situation in Late Modern English continues into the present; it continues to pattern with both active and passive infinitives, without a difference in meaning. For *fit*, only characteristic-oriented uses with animate subjects have been retained. For *good*, both characteristic- and activity-oriented uses are attested with active and passive infinitives respectively. Therefore, however few the PDE data are, they comply with the coding tendencies proposed for the characteristic- and activity-oriented constructions in Modern English.

1.4 Conclusion

In this section, I have shown that the constructions that are often analyzed as object raising or *tough*-constructions, can actually be divided into two semantically and syntactically distinct types, viz. activity-oriented and characteristic-oriented constructions. Importantly, these two constructions differ in the type of relation between matrix and complement. In the first type, the adjective can be interpreted as being in a predicative relation to the *to*-infinitive, as it modifies the activity denoted by the *to*-clause (e.g., *blood is good to let*). Such expressions have a (weak) deontic meaning and involve object raising (*it is good to let blood*). In characteristic-oriented constructions, the adjective modifies an entity (e.g., *this apple is good to eat*), and the *to*-infinitive specifies in which regard or for what activity the quality denoted by the adjective holds. These expressions are purely evaluative, and involve object deletion. In addition, it was found that the distribution of the adjectives studied across these two construction types is lexico-semantically determined: strong adjectives occur in activity-oriented constructions only, whereas weak adjectives are found in both construction types. We can thus conclude that the PAC is very similar to the extraposition construction, involving a conceptual distinction between deontic-modal and

[21] It may be argued that (5.39) is more characteristic-oriented that activity-oriented. However, I argue for an activity-oriented reading on the basis of the negative polarity of the adjectival predicate, which

evaluative meaning (albeit operating at a different level of clause structure), which correlates with the lexico-semantic distinction between strong and weak adjectives.

In addition, it was shown that the distinction between activity-oriented and characteristic-oriented constructions can be used to explain the formal types of clausal complements across the historical stages. Whereas both types are construed with active *to*-infinitives up to the Late Middle English period, they take on different forms after the emergence of the passive *to*-infinitive. This is clear from the weak adjectives especially, which tend to retain the active *to*-infinitive in characteristic-oriented constructions and to adopt the new passive *to*-infinitive in activity-oriented ones. This development is represented graphically in Figure 5.1 below.

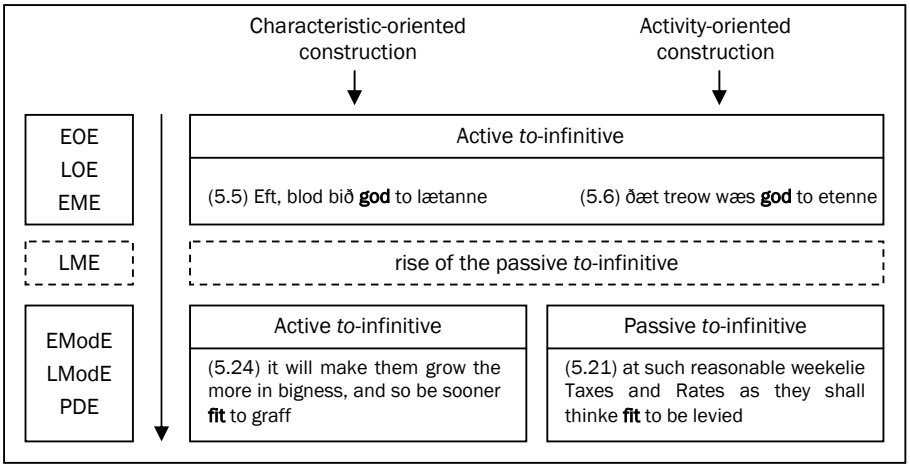

Figure 5.1: The developments of the formal types of complements with characteristic- and activity-oriented constructions

However, the Modern English data also include a few ambiguous cases and characteristic-oriented constructions with an 'unexpected' passive infinitive, which show that the formal distinction between active and passive infinitives is not always so systematically related to function on a one-to-one basis. In Present-day English, only few tokens are attested, but they were seen to conform to the tendencies described above. For the strong adjectives, by contrast, the variation in voice type could not be explained by the distinction between activity- and characteristic-oriented constructions. In fact, the adjective *necessary* is invariably used in the activity-oriented type. Its complements showed a sudden rise of the passive *to*-infinitive in the Early Modern period, but the active one gained ground again in the Late Modern period. In Present-day English, *necessary* is only rarely found in the PAC. We can thus conclude that with the adjectives that occur in the two types of construction

foregrounds an adverbial reading (Fischer 1991: 175).

distinguished here, viz. activity- and characteristic-oriented ones, the distinction serves well to explain the seemingly random variation of voice type.

2 The development of propositional complements in ECs[22]

The second section of this chapter develops another case-study, viz. a functional description of the clausal complement patterns of a set of six adjectives in extraposition constructions (ECs), from both a synchronic and a diachronic perspective. It focuses on the distribution and the development of propositional complements occurring as a primary as well as a secondary complement, i.e. as a complement of the adjectival matrix or as a complement of another primary complement. The description builds on the conceptual description of the ECs presented in chapter 1, section 2, and on the general syntactic description presented in chapter 4. Again, it will focus on the relation between matrix and complement, as well as on the types of clausal complements.

The most important distinction in the relation between matrix and complement is that between deontic and non-modal evaluative expressions, which are illustrated in (5.46) and (5.47) respectively.

(5.46) 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. I hope you are not offended. (CB, ukbooks)

(5.47) Lastly, I believe it is **Important** that the NEC is now dominated by members of the Shadow Cabinet. In my election address last year for the NEC I said `The Liberals are not our allies but our competitors'. Subsequent events in Tower Hamlets and our success in the South in the European Elections has reinforced this. Yet Walworth Road still have not developed a strategy for this. (CB, ukephem)

Throughout the previous chapters, complements like the *to*-clause in (5.46) have been termed 'mandative' (Huddleston and Pullum 2002: 995), as they assess the desirability of a potential or tenseless SoA, whereas complements like the *that*-clause in (5.47) have been termed 'propositional', as they refer to a tensed SoA which is presupposed to be true (see chapter 1, 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, viz. *essential* and *crucial* (see chapter 3, sections 2.4 and 4.4). In addition, the Present-day English data present us with another interesting construction that contains a propositional complement, which is illustrated in (5.48). This example involves a pattern of combined complementation, in which the (secondary) propositional complement functions as object clause of the primary mandative complement, *to realize*.

[22] This section is based on Van linden and Davidse (Forthcoming).

(5.48) 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 (5.47) which has a primary propositional complement. In both, the hearer is urged to give his attention to the proposition put forward by the speaker. This pragmatic link between mandative-propositional complementation and propositional complementation suggests a possible diachronic link between the two.

This section will study the development of the propositional pattern with adjectives. Specifically, I will show that the adjectives studied here, viz. strong *essential* and *crucial*, and weak *appropriate*, *fitting*, *important* and *proper*, are first attested with mandative complements and only later develop (primary) propositional ones, in two different ways. One path of development involves the pattern of combined complementation illustrated in (5.48), and the other involves bridging contexts. In any case, the two pathways can be characterized by an upward movement in the conceptual plane of the conceptual map, just like those found with the adjectival matrices in chapter 3.

The structure of this section is as follows. Section 2.1 briefly accounts for the choice of adjectives studied here. Since we find only restricted and one-sided treatments of the complementation of these adjectives in reference grammars of Present-day English (cf. chapter 4, see also Van linden and Davidse Forthcoming), section 2.2 will present a synchronic description of the semantic and formal types of complements found with these adjectives, also indicating their relative frequencies. Sections 2.3 and 2.4 investigate the diachronic developments through which the current distribution of the complements was fashioned. More precisely, section 2.3 will focus on the development of the mandative complements and section 2.4 on that of the propositional complements. This last section will present two pathways of change that corroborate the diachronic validity of the conceptual map. Section 2.5, finally, summarizes the main findings.

2.1 The data

As this section 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 or existence in the English lexicon, as discussed in chapter 2, section 2.1. As in the case of the studies presented in chapter 3, 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*, *gelimplic* 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.[23] The adjectives of group C, by contrast, offer a diachronic window, as the data indicate a different period of appearance for mandative and propositional complements. For the strong adjectives *essential* and *crucial*, this has been shown in chapter 3, sections 2.4 and 4.4);[24] hence, they were selected for this case-study. Since their meaning in non-modal evaluative constructions can be paraphrased as 'very important', the adjective *important* was included too. Together, these three will be referred to as the 'importance adjectives'. In addition to *important*, three other weak adjectives were selected, viz. *appropriate*, *proper* and *fitting*, which will be termed the 'appropriateness ajectives'. Corpus searches for each of the six adjectives were carried out in the diachronic and synchronic corpora presented in chapter 2, section 2.2, Table 2.3. As noted in chapter 2, section 2.2, 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 much larger *Corpus of Early Modern English texts* (CEMET), described in De Smet (2008: 14–16).

2.2 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 chapter 1, sections 2.2.2 and 2.3.1). In particular, it presents a functional and distributional description of the synchronic complementation of *important*, *essential*, *crucial*, *appropriate*, *fitting* and *proper* in ECs. Central to this description is the distinction between primary complements, which depend immediately on the adjectival matrix (sections 2.2.1, 2.2.2), and secondary complements, which are complements of clauses that are themselves complements of the adjectival matrix (section 2.2.3).

Section 2.2.1 focuses on the relation between matrix and complement, and it provides arguments for distinguishing between mandative and propositional complements. Section 2.2.2 concentrates on the types of clausal complement, and offers a functional account of the various subtypes of propositional and mandative complements. It will also discuss the quantitative instantiation of the complement types for each adjective in the synchronic data, which will give us an idea of what are at present marked and unmarked complementation options. Section 2.2.3, finally, will offer a descriptive inventory of the different constructions with secondary complements found in the data. In general, the

[23] OE examples of *good* with propositional *that*- and *to*-clauses have been given in (4.29) and (4.48) respectively (see chapter 4, sections 2.1.2 and 2.2.2.1).

[24] 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 5.9).

synchronic data suggest a number of diachronic hypotheses, which will be investigated in sections 2.3 and 2.4.

2.2.1 The relation between matrix and complement: Mandative versus propositional primary complements

As pointed out in chapter 1, section 2.2.2, mandative and propositional complements typically involve a difference in the meaning of the construction as a whole and also of the adjectival matrix.[25] The following two examples with *proper* illustrate these basic differences.

(5.49) He said: "Because of the information we got and the possibility of anybody armed being in the building we felt it was **proper** to protect anyone inside or outside from danger. There are a lot of things to be cleared up - we want to find out exactly what was behind this." (CB, sunnow)

(5.50) 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)

Example (5.49) has a **mandative** *to*-clause describing an as yet unrealized but desired action. The whole construction conveys the speaker's assessment of the SoA denoted by the *to*-clause as (morally) desirable: at a particular moment in the past, he felt it was desirable that they should protect anyone inside or outside from danger. Thus, the construction has a deontic meaning as defined in chapter 1, section 2.2.3: a modal source assesses the desirability or (moral) acceptability/necessity for an agent to carry out a certain action. The semantics of the construction also forces a deontic flavour onto the interpretation of the matrix adjective *proper*. By contrast, the construction in (5.50) has a **propositional** complement. The whole construction expresses the speaker's evaluation of a propositional content, which is presupposed to be true (as explained in chapter 1, section 2.2.2). In this example, the event referred to has already occurred at the time of utterance.[26] In fact, it is irrelevant whether the speaker wanted the SoA to happen or not; (s)he 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 (5.50), and as we will further see in section 2.4, the meaning of adjectives such as *proper* and *important* in

[25] Exceptions are examples such as (5.48), with mandative + propositional complement, and (5.47), which has only a propositional complement 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 2.4.

[26] Example (5.50) is taken from an article reporting on the re-opening of the Royal Opera House after that event.

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.

As discussed in chapter 1, section 2.2.2, the main argument for distinguishing between mandative and propositional complements relates to the difference in their **factuality status**. The SoAs in mandative complements are inherently potential, and hence unrealized, as in (5.49). The SoAs in propositional complements, by contrast, may have been realized, as in (5.50) above, or not yet, as in (5.51) below. What is crucial here is that the proposition denoted by the complement is presupposed to be true, which entails that the hearer can easily infer its factuality status. Thus, in (5.51), the speaker takes for granted the fact that the final game will be decisive, and (s)he evaluates this situation as fitting.

(5.51) "It would be nice if we it had been done and dusted by now, but it hasn't worked out that way. However, I always thought it would go down to the last game of the season and it's only right and **fitting** that it will." Richardson knows his side cannot afford to take their foot off the gas on Friday. (CB, sunnow)

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 (5.49) 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 (5.50), 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*)." In fact, 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 (5.52), finally, belong to the modal predicates, much like those of deontic constructions if they are not interpreted as desiderative CTPs (see above). This plausible membership in the same semantic type of CTP may explain why dynamic and deontic constructions are often hard to distinguish. As pointed out in chapter 4, sections 2.1.2 and 2.2.2.1, there are no formal criteria to tell them apart. Rather, as discussed in chapter 1, section 1.2.1, 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. However, the shared relation of necessity makes these two conceptual types share the same CTP category. This is why also in this study mandative complements include the clausal complements of both dynamic and deontic constructions.

(5.52) The size of collector -- typically 3 to 5 square metres -- depends both on its efficiency and on a household's hot water needs. Direct sunshine is not required, so they work even on cloudy days. [...] 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 60[°]C even in the summer. (CB, ukephem)

As has been shown in the literature (Givón 1980, 1990: ch. 13; Noonan 1985, 2007; Palmer 1986: ch. 4; Ransom 1986; Dik 1989, 1997ab; Hengeveld 1989, 1990; Siewierska 1991), the semantic properties of the different types of complement relation can also be described in terms of general parameters, 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.

First, 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. As pointed out in section 1.2 above, commentative predicates, expressing non-modal evaluation, pertain to the propositional level. In fact, the complement relation "does not involve two distinct SoAs directly, but rather an SoA [viz. the fact that an attitudinal source expresses his/her stance, AVL] and a propositional content referring to another SoA [viz. the object of attitudinal assessment, AVL]" (Cristofaro 2003: 110–111). This is also why in chapter 1, section 2.2.2 (Table 1.3) 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 chapter 1, 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 second parameter is clearly related to the first one, but concentrates on the **semantic dependency** of the complements (Noonan 1985, 2007). In particular, mandative and propositional complements differ in terms of time-reference and discourse

dependency.[27] First, 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 realization 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).[28] 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," which is reflected by their typological tendency to be coded by non tense-marked verbal forms such as the infinitive (see section 2.2.2.2 below). 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 mandatives which determines their dependence on the modal or desiderative matrix.[29] 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 correlates with the distinction between tenseless and tensed SoAs introduced in chapter 1, section 2.2.2.

Secondly, according to Noonan (2007: 102), "a complement is discourse-dependent if it is part of the background or common ground of the participants in the discourse." 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 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 complement dependency discussed by Noonan (2007). In

[27] Noonan (2007) also distinguishes a third subtype of semantic dependency, viz. truth-value dependency. A complement is truth-value dependent if "the complement construction containing it involves an explicit qualification of commitment to the truth of the proposition embodied in the complement" (Noonan 2007: 102). As this type of dependency is found with predicates expressing positive or negative propositional attitude, such as *believe*, *be possible*, *doubt*, *deny*, it does not apply to the data studied here.

[28] 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*).

[29] 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).

general, the first two parameters are related, as 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 presupposed to be true.

The third parameter pertains to '**semantic integration**', a notion introduced by Givón (1980; 1990: ch. 13). Against Givón's (1990: 526) view that semantic integration assumes "the spatio-temporal integration of two events into a single event frame," however, 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). In fact, 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).[30] Commentative relations, finally, involve no semantic integration at all, as they do not involve a direct linking of two SoAs. Rather, 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 5.7 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. In fact, 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 evaluative categories in the

[30] According to Givón (1990: 528–530), the semantic integration between linked SoAs is also determined by the involvement of an element of will: predicates involving an element of will, such as desideratives and manupulatives, determine a higher degree of semantic integration than predicates which do not, such as propositional attitude and utterance predicates. Cristofaro (2003: 121) opposes this view (for further discussion, see chapter 4, section 2.3, note 49).

Parameters →	Level of clause	Semantic dependency		Semantic
Types of CTP ↓	structure	Time-reference	discourse	integration
Modal	predication	dependent	independent	high degree
Desiderative	predication	dependent	independent	low degree
Commentative	proposition	independent	dependent	no integration

Table 5.7: The semantic properties of modal, desiderative and commentative CTPs

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 chapter 1), the study of complement relations could not adduce additional evidence. In particular, 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,[31] the counts of mandative complements with *essential* and *crucial* in the following sections include the clausal complements of both deontic and dynamic constructions.

2.2.2 The types of primary mandative and propositional complements

2.2.2.1 Functional description

While the previous section discussed the relation 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 mandatives and propositions to their different grammatical realizations. At the same time, the usage-based aspect of the relative frequencies of these formal types as attested in the data set will also be brought into the picture. Table 5.8 details the overall absolute and relative frequencies of the semantic subtypes, cross-classified with their formal codings. The normalized frequencies (per 100,000 words) have been rounded up to two decimal places, or, in the case of figures with larger decimals, to at least two significant digits. Again, the abbreviations used in this and all the following tables are: n: absolute frequency; N: relative frequency per 100,000 words; %: relative share.

[31] 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 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. chapter 4, section 1.2; see also chapter 6, section 3.2 for further discussion).

COBUILD		6 adjectives				
		n	N	%	% of semantic type	% form per semantic type
prop	*that*	106	0.25	5.48	5.79	94.64
	to	6	0.014	0.31		5.36
prop/ mand	*that*	17	0.040	0.88	1.14	77.27
	to	5	0.012	0.26		22.73
mand	*that*	586	1.39	30.28	93.07	32.54
	to	1,215	2.89	62.79		67.46
total		1,935	4.60	100	100	-

Table 5.8: The overall distribution of propositional and mandative complements with the adjectives of importance and appropriateness in PDE

Mandative complements express potential SoAs, whose actualization is necessary because of SoA-internal reasons (dynamic constructions), or desired by the speaker or a third party, as in (5.53) below (deontic constructions). As shown by Table 5.8, *to*-infinitives are a common coding form of mandatives (67.46%), but not of propositions (5.36%).

(5.53) In the New Testament we find images which suggest that the priestly, the prophetic and the kingly strands of the Old Testament have been brought together in Jesus. It is **important** to hold a large view here as it is too easy to be cornered by arguments on the priestly clans of the Hebrew tradition, their need for purity, for blood sacrifices, their family tradition and, so, the exclusively male succession. (CB, ukephem)

Bolinger (1967b: 351–352) has pointed out the close analogy between an infinitive coding a mandative complement, and an imperative, which expresses mandatory status in the independent clause. Both are non-finite, lacking deictic tense marking, and both typically have no subject expressed with them.[32] According to Bolinger, the mandative infinitive is functionally and formally the closest counterpart of the imperative. 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 (Davidse 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 5.8 also shows that 32.54% of mandatives are coded by finite clauses. As discussed in chapter 4, section 2.1.2, finite mandatives may contain a subjunctive, a deontic modal or an indicative form of the verb.[33] The first two coding forms, illustrated by

[32] As noted by Bolinger (1967b: 362), the English imperative even has the form of the infinitive.

[33] The corpus data contradict Huddleston and Pullum's (2002: 995) claim that 'covert' mandatives with indicative are fairly rare. Of the 433 mandative *that*-clauses found with *important* in CB, 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. In fact, only 9 instances (2.08%) contain

(5.54) and (5.55), mark the potentiality and desirability or necessity of the situation. With an indicative finite, illustrated by (5.56), these two elements have to be inferred on the basis of contextual clues. In (5.56), the preceding discourse makes it clear that the appointment of a manager at some future point relative to the time of utterance is at stake. The context also shows that the EC with *important* expresses the (moral) desirability of appointing a decent manager. In other words, contextual elements activate the potential status of the action and its moral desirability.

(5.54) […] the Trust made representations during the Water Bill's passage through Parliament which were successful in strengthening the safeguards for conservation and public access on land to be retained by the newly privatised companies, though less so on land to be disposed of. In the latter case, it is **essential** that the Secretary of State exercise his discretionary power to require land within designated areas to be offered to a conservation organisation, and elsewhere to insist on adequate protection from development and provisions for free public access. (CB, ukephem)

(5.55) Moreover, if one party does not want to divorce, and sees themselves as the innocent party, it is extremely **important** that they should not be penalised. To this extent at least, it is **essential** that immoral or unjust conduct should be taken into account. These, then, are some of the concerns I have about the Bill as presently drafted. (CB, times)

(5.56) Erm I obviously feel it's very **important** that we do get a decent manager. <M03> Mhm. <M15> And erm along your short list erm we see I see the name of Ian Atkins touted. <M03> Mhm. <M15> And I'm afraid he's not wanted at the club because a player erm who's a club captain and a senior player in the side and gives out two fingered gestures to <ZF1> hi <ZF0> his own fans is not a welcome man. (CB, ukspok)

Propositional complements, by contrast, are typically and in the overwhelming majority of cases coded by finite clauses (94.64%), and only marginally by non-finite ones (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 VPs or attitudinal *should* give the proposition such a reference point; i.e. these VPs can be used to refer to tensed SoAs (see chapter 1, section 2.2.2). Thus, the propositional contents in (5.57) and (5.58) can be challenged by interrogatives replaying the subject and the finite in terms of which the claim in the original declarative

unambiguous subjunctive finites. Modal auxiliaries such as *should*, finally, are found in 63 examples (14.55%).

was asserted: (5.57) *Has it really been given to a chartered town planner?* (5.58) *Has it really been written by a woman?* Moreover, the finite VP 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.

(5.57) Ministers and MPs would much rather the onus of accepting or rejecting planning applications or proposals for development fell on local councillors. So if planning is indisputably a local function, it is perhaps **appropriate** that what is certainly local government's key job during the next five years has just been given to a chartered town planner. (CB, times)

(5.58) 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 all those with bulimia are women, and that it is written by someone who has experienced the syndrome herself. (CB, ukbooks)

It is rare for a propositional complement to be expressed by an infinitival complement in ECs in Modern English.[34] Only a few instances were found in the Late Modern English and COBUILD data, and only with the weak adjectives (see Tables 5.9 and 5.10 below). As just noted, propositions require the meanings expressed by the finite element of a tensed VP or attitudinal *should*. A finite VP gives the proposition a reference point in the speech exchange 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. The cases in the data typically express the subject in a prepositional phrase in the matrix, like *of her* in (5.59) below, which refers to the agent of the *to*-infinitive (cf. Bolinger 1977: 147–149). The temporal anchoring of the proposition is brought about indirectly, viz. by the temporal relation of the infinitive to the finite VP in the matrix.

(5.59) "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 (5.59), the perfect infinitive *have called* is anterior vis-à-vis the past expressed by *was* (Declerck 1991a: 118). Most of the infinitival propositional complements in the data have perfect infinitives, locating the situation referred to before the time of orientation of the matrix. However, a few examples have present infinitives as in (5.60), which raises the question of how the temporal anchoring of the proposition is brought about.

[34] The reader may have noted that the frequencies in Table 5.8 differ considerably from those in Tables 4.19 and 4.20 (chapter 4, section 2.2.2.1). In fact, as will be seen in the next chapter, it is especially the weak adjective *good* that frequently combines with propositional *to*-infinitives in Present-day English. As *good* is not looked at in this case-study, its data are not included in Table 5.8.

(5.60) Behind the youth and maiden was a tempting alcove and seat, formed naturally in the beetling mass, and wide enough to admit two or three persons. 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 (5.60), the locative adverb *here* indirectly indicates that the actualization of the situation in the *to*-complement is simultaneous with the moment of speaking, as it deictically locates the proposition in the here-and-now of the speech event. Again, note that the subject of the infinitive is expressed by an *of*-PP. Finally, there are also a few cases in which the subject of the infinitive is expressed by a *for*-PP, as in (5.61), which, in contrast to the *of*-PP in (5.59), is structurally part of the complement clause (Huddleston and Pullum 2002: 1178).

(5.61) [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 (5.61) is located as simultaneous with the temporal zero-point in the sense that it expresses a permanent truth (Declerck 1991a: 90).

Having discussed the distinct coding tendencies of mandative and propositional complements, I have to point out that in a small number of cases (1.14%, see Table 5.8) the contexts do not disambiguate the two possible readings of *to*-clauses or *that*-complements. Instead, they form **bridging contexts** (Evans and Wilkins 2000: 550),[35] which contextually support both a mandative and a propositional reading, as is the case with *that a club should have its history and traditions* in (5.62). From the context, we can infer that in the club in question, Nottingham Forest, this sense of history is very much present. This supports a propositional reading of the *that*-complement, with *should* functioning as attitudinal *should*. However, as suggested by the indefinite NP *a club*, the interviewed speaker, Basset, can also be understood to say that it is desirable for clubs in general to recognize their history, in which case the *that*-complement and its finite *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

[35] Evans and Wilkins (2000) have proposed the term 'bridging context' to describe a particular phase in semantic change from meaning A to B, viz. 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 study, 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.

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.

(5.62) Reluctant though he is to succumb to the pressures which have left Cloughie physically and emotionally scarred, Bassett is still happy to follow in the great man's footsteps. But he knows he will never be able to emulate his predecessor's achievements. [...] Bassett said: "Let's face it - he's an impossible act to follow. He did for Forest what Herbert Chapman did with Arsenal, but he did it at a much smaller club. Though we don't see him at Forest nowadays there are reminders everywhere of what he and his team did during that remarkable 18 years. I don't mind that. I've never wanted to rip the pictures of Cloughie off the walls. It's **Important** that a club should have its history and traditions. I don't want to get rid of the ghosts of the past. I don't find them a burden, but all the success Forest had has built up false expectations around the place." (CB. sunnow)

2.2.2.2 Quantitative instantiation in the data

After this functional description of the primary complements found in the data, I turn to their quantitative instantiation.

COBUILD		*essential*			*crucial*			*important*		
		n	N	%	n	N	%	n	N	%
prop	*that*	1	0.0024	0.42	2	0.0048	3.85	38	0.090	2.62
	to	0	0.00	0.00	0	0.00	0.00	2	0.0048	0.14
prop/ mand	*that*	0	0.00	0.00	0	0.00	0.00	8	0.019	0.55
	to	0	0.00	0.00	0	0.00	0.00	1	0.0024	0.07
mand	*that*	117	0.28	48.95	27	0.064	51.91	433	1.03	29.88
	to	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 5.9: The distribution of propositional and mandative complements with the importance adjectives in PDE

COBUILD		*appropriate*			*proper*			*fitting*		
		n	N	%	n	N	%	n	N	%
prop	*that*	33	0.078	24.81	2	0.0048	8.00	30	0.071	81.08
	to	2	0.0048	1.50	1	0.0024	4.00	1	0.0024	2.70
prop/ mand	*that*	6	0.014	4.51	2	0.0048	8.00	1	0.0024	2.70
	to	2	0.0048	1.50	2	0.0048	8.00	0	0.00	0.00
mand	*that*	6	0.014	4.51	3	0.0071	12.00	0	0.00	0.00
	to	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

Table 5.10: The distribution of propositional and mandative complements with the appropriateness adjectives in PDE

As Tables 5.9 and 5.10 show, ECs with the six adjectives studied here have both mandative and propositional clausal complements in Present-day English. However, there are considerable differences within the distribution of the two complement types, which for the propositional complements cluster in terms of the two subsets of adjectives. With the importance adjectives *essential*, *crucial* and *important*, propositional complements account for only a few percentages, with *crucial* reaching the highest relative frequency, viz. 3.85%. The propositional complements of the appropriateness adjectives *appropriate*, *proper* and *fitting*, by contrast, constitute 26.32% (or 32.33%), 12.00% (or 28.00%), and 83.78% (or 86.49%) respectively.[36] On the assumption that high frequency reflects **unmarkedness** (Haspelmath 2008), we can draw two main 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 general 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 non-finite versus finite subtypes of mandative clauses does not correlate in any clear way with the importance and appropriateness adjectives. With *important*, *appropriate*, *fitting* and *proper*, infinitival ones predominate, while with *essential* and *crucial* *to*-infinitives and *that*-clauses occur in comparable proportions. These figures thus present us with a more nuanced picture than the general counts given in chapter 4, section 2.3, Tables 4.23 and 4.24.

In this section it has become clear that the mandative complements of the adjectives in ECs generally 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. More precisely, I will show that the mandative complements, which predominate in PDE, 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 lexical 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.

2.2.3 Secondary complements

This section investigates the **combined patterns** of complementation found with the adjectives in Present-day English (see also chapter 1, section 2.3.2, and chapter 4, section 2.2.2.1). 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,

[36] The percentages between brackets add bridging contexts to the unambiguous cases.

termed a 'secondary' complement. In the data, the primary complement is invariably of the mandative type (typically deontic), 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 (5.63), or a propositional *that*-clause, as in (5.64). Especially the last pattern is fairly frequent in PDE: 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. (5.47)). In chapter 6, section 3.1.2, I will return to this pattern and I will present arguments to regard it as a partially filled construction, viz. the 'mental focus construction'.

(5.63) 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)

(5.64) Berliner reports that a 20-year veteran of New York City schools described their impact as nothing short of a miracle (ibid., 96). 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, often involving White or principally White pupils, who generally come from higher socio-economic status backgrounds. (CB, ukmags)

It should be noted that the secondary complement dependent on a primary mandative one can also be an indirect question, as in (5.65) and (5.66). These indirect questions are ranged with propositional complements (Halliday 1994: 241), because they pertain to SoAs that are located relative to the temporal zero-point. They are concerned with arguable truth-claims: indirect polar interrogatives as in (5.65) inquire about the actualization of an SoA, while indirect *wh*-interrogatives as in (5.66) presuppose actualization of the SoA but represent the *wh*-element as a variable (Huddleston and Pullum 2002: 902)

(5.65) 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)

(5.66) The Quaker organization, the American Friends Service Committee, produced a pamphlet written at about the same time by James Bristol who asserted that before we deplore "terrorism, it is **essential** *to recognize* clearly whose terrorism came first," going on to observe that to much of the world "the United States is an outlaw nation." (CB, ukbooks)

Exceptionally, we also find primary mandative complements being expressed by a finite clause, which can in turn be complemented by a mandative or a propositional *that*-clause, as in (5.67) and (5.68) respectively. The rarity 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).

(5.67) 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)

(5.68) It is **important** *that all clinicians remember* that it is not their pride in being right about a diagnosis at any level which makes them therapeutic, but rather their ability to aim the diagnosis at the correct level to be helpful to the patient. (CB, ukbooks)

Tables 5.11 and 5.12 show the absolute and relative frequencies of the combined complementation patterns discussed above.

COBUILD	*essential*			*crucial*			*important*		
	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 5.11: The distribution of combined complementation patterns with the importance adjectives in PDE

COBUILD	*appropriate*			*proper*			*fitting*		
	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	-

Table 5.12: The distribution of combined complementation patterns with the appropriateness adjectives in PDE

These figures show that, with 79.22% of the total, the combined pattern with secondary propositions is much more frequent than that with secondary mandatives (20.78%). In other words, 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 among each other as to the frequency of the pattern with mandative and proposition. This combined

pattern is more common 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. In fact, it will be hypothesized in section 2.4 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.

2.3 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 will also allow us to trace the development of the formal types of mandative complements. Tables 5.13 to 5.18 detail the distribution of primary propositional and mandative complements, cross-classified with their formal realization as *to*-infinitive or finite clause. As the earliest attestations of clausal complements with the adjectives, viz. with *proper*, date from the period 1570–1640, this section only discusses data from that period onwards.

important		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	*that*	n	-	-	0	0	1	38
		N	-	-	0.00	0.00	0.016	0.090
		%	-	-	0.00	0.00	2.33	2.62
	to	n	-	-	0	0	0	2
		N	-	-	0.00	0.00	0.00	0.0048
		%	-	-	0.00	0.00	0.00	0.14
prop/ mand	*that*	n	-	-	0	0	0	8
		N	-	-	0.00	0.00	0.00	0.019
		%	-	-	0.00	0.00	0.00	0.55
	to	n	-	-	0	0	0	1
		N	-	-	0.00	0.00	0.00	0.0024
		%	-	-	0.00	0.00	0.00	0.07
mand	*that*	n	-	-	0	20	15	433
		N	-	-	0.00	0.35	0.24	1.03
		%	-	-	0.00	55.56	34.88	29.88
	to	n	-	-	1	16	27	967
		N	-	-	0.033	0.28	0.43	2.30
		%	-	-	100	44.44	62.79	66.74

Table 5.13: The diachronic distribution of primary propositional and mandative complements of *be important*

essential		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	*that*	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	*that*	n	-	1	1	2	7	117
		N	-	0.51	0.033	0.035	0.11	0.28
		%	-	100	100	40	77.77	48.95
	to	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 5.14: The diachronic distribution of primary propositional and mandative complements of *be essential*

crucial		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	*that*	n	-	-	-	-	-	2
		N	-	-	-	-	-	0.0048
		%	-	-	-	-	-	3.85
mand	*that*	n	-	-	-	-	-	27
		N	-	-	-	-	-	0.064
		%	-	-	-	-	-	51.91
	to	n	-	-	-	-	-	23
		N	-	-	-	-	-	0.055
		%	-	-	-	-	-	44.23

Table 5.15: The diachronic distribution of primary propositional and mandative complements of *be crucial*

appropriate		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	*that*	n	-	-	-	0	0	33
		N	-	-	-	0.00	0.00	0.078
		%	-	-	-	0.00	0.00	24.81
	to	n	-	-	-	0	0	2
		N	-	-	-	0.00	0.00	0.0048
		%	-	-	-	0.00	0.00	1.50
prop/ mand	*that*	n	-	-	-	0	0	6
		N	-	-	-	0.00	0.00	0.014
		%	-	-	-	0.00	0.00	4.51
	to	n	-	-	-	0	0	2
		N	-	-	-	0.00	0.00	0.0048
		%	-	-	-	0.00	0.00	1.50
mand	*that*	n	-	-	-	0	0	6
		N	-	-	-	0.00	0.00	0.014
		%	-	-	-	0.00	0.00	4.51
	to	n	-	-	-	2	2	84
		N	-	-	-	0.035	0.32	0.20
		%	-	-	-	100	100	63.16

Table 5.16: The diachronic distribution of primary propositional and mandative complements of *be appropriate*

First, if we concentrate on the development of the semantic types of complement, the figures show that **mandatives** generally **predominate**. The skew (between 60% and 99%) towards mandative complements found in the synchronic data (except with *fitting*, viz. 10.81%) turns out to be preceded by even stronger skews in the historical data. Propositional complements emerge 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 2.2.1, 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).

fitting		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	*that*	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
	to	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	*that*	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	*that*	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
	to	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

Table 5.17: The diachronic distribution of primary propositional and mandative complements of *be fitting*

Secondly, 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 very frequent *important*, but not with *essential* and *crucial* (see also chapter 4, section 2.3, Table 4.26). 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 homogeneous development all occurred in Late Modern English, for instance in the period 1780–1850 with *important* and in the period 1850–1920 with *essential*. It can also be noted that the distinction between importance and appropriateness adjectives does not appear to play any role in the distribution of the formal subtypes of the mandative complements.

proper		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	*that*	n	0	0	0	0	1	2
		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
	to	n	0	0	0	0	2	1
		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	*that*	n	0	0	1	1	2	2
		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
	to	n	0	1	0	2	1	2
		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	*that*	n	0	0	10	19	5	3
		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
	to	n	2	10	185	137	9	15
		N	0.31	0.51	6.09	2.39	0.14	0.036
		%	100	90.91	94.39	86.16	45.00	60.00

Table 5.18: The diachronic distribution of primary propositional and mandative complements of *be proper*

2.4 Diachronic development of propositional complements

The flip side of the diachronic predominance of mandative complements discussed in section 2.3 is that primary propositional complements form a later development and a continuing minor option with all adjectives but *fitting*. This section focuses on the diachronic processes that have lead to the synchronic distribution of propositional complements. As suggested in section 2.2.3, we also have to take propositions occurring as secondary complement of a mandative into account here. 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 validity of the conceptual map.

Table 5.19 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 2.2.3 above). The numbers between square brackets represent bridging contexts, which contextually support both a mandative and a propositional reading (see section 2.2.2.1 above).

Adjectives	level	Comp form	1640–1710	1710–1780	1780–1850	1850–1920	1990–1995
appropriate	1°	*that*	-	-	-	-	33+[6] 0.078+[0.014]
		to	-	-	-	-	2+[2] 0.0048+[0.0048]
	2°	*that /IQ*	-	-	1 0.017	-	2 0.0048
fitting	1°	*that*	-	[3] [0.099]	[3] [0.052]	2+[2] 0.032+[0.032]	30+[1] 0.071+[0.0024]
		to	-	-	-	-	1 0.0024
	2°	*that /IQ*	-	-	1 0.017	1 0.016	-
proper	1°	*that*	-	[1] [0.033]	[1] [0.017]	1+[2] 0.016+[0.032]	2+[2] 0.0048+[0.0048]
		to	[1] [0.051]	-	[2] [0.035]	2+[1] 0.032+[0.016]	1+[2] 0.0024+[0.0048]
	2°	*that /IQ*	3 0.15	16 0.53	12 0.21	2 0.032	1 0.0024
important	1°	*that*	-	-	-	1 0.016	38+[8] 0.090+[0.019]
		to	-	-	-	-	2+[1] 0.0048+[0.0024]
	2°	*that /IQ*	-	1 0.033	4 0.070	10 0.16	241 0.57
essential	1°	*that*	-	-	-	-	1 0.0024
	2°	*that /IQ*	-	-	-	1 0.016	15 0.036
crucial	1°	*that*	-	-	-	-	2 0.0048
	2°	*that /IQ*	-	-	-	-	4 0.0095

Table 5.19: 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*

As noted in section 2.3, all six adjectives originally took mandative complements. Interestingly, with all the adjectives, unambiguous propositional complements diachronically first appear as secondary complement of a mandative clause. That is, sooner or later they all acquired 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. Below are

examples involving the appropriateness adjectives; examples involving importance adjectives can be found in section 2.2.3 above.

(5.69) 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*)

(5.70) […] 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, their social duties, and domestic habits*)

(5.71) During His stay in London He visited Oxford (where He and His party--of Persians mainly – were the guests of Professor and Mrs. Cheyne), Edinburgh, Clifton, and Woking. It is **fitting** to notice here that the audience at Oxford, though highly academic, seemed to be deeply interested, and that Dr. Carpenter made an admirable speech. (CLMETEV 1914 Cheyne, *The reconciliation of races and religions*)

Semantically, this pattern expresses the desirability (deontic modality) of 'considering' or 'communicating about' the secondary propositional complement.

However, this general picture is more differentiated if we take into account 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 illustrate the first and the second situation respectively. This is not the case with the importance adjectives, which do not manifest any bridging contexts in the historical stages and only develop them in PDE with *important*. Moreover, the distribution of the propositional complements in Present-day English (see also Table 5.19) falls out differently for the two sets of adjectives. The appropriateness adjectives are construed predominantly with primary propositional clauses. By contrast, the importance adjectives have relatively more propositional complements functioning as secondary complements to a primary mandative complement than as primary propositional *that*-clauses. This suggests that the two sets of adjectives may have developed propositional complements in different ways. In what follows, I will reconstruct these two distinct paths of development.

2.4.1 The adjectives of importance

The adjectives of importance followed a path that can be seen as a development of the **mandative-propositional** pattern. As shown by Table 5.19 above, the predominance of the mandative-propositional pattern over the primary propositional pattern is found throughout their development and right into PDE, 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. As shown by

the normalized frequencies, 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 suggests a development A > A + B > B, in which the link between two different constructions A and B, mandative and propositional complementation, is formed by a combination of the two complementation patterns, A + B. For the resulting construction B with primary propositional complementation, two distinct pragmatico-semantic uses could be observed.

A first use, illustrated by (5.72) and (5.73), has a close pragmatic correspondence to the combined pattern. In these examples it is not the SoA as such that is evaluated as important, but the speaker asks the hearer to focus mentally on a specific proposition or claim.[37]

(5.72) 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)

(5.73) 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)

For instance, in (5.72) the speaker does not evaluate the SoA 'he's pissed' as 'crucial'; rather this example means 'it's crucial to note that he's very drunk'. Likewise, in (5.73), the speaker asks his interlocutor to focus mentally on his motivation in designing clothes: he 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' an SoA 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 thought of as '**pragmatic persistence**', in analogy with Hopper's (1991: 22) notion of lexical persistence,[38] i.e. the persistence of the pragmatic value associated with the original construction. As a consequence, the adjectives in examples like (5.72) and (5.73) are not used in a purely evaluative sense with regard to the dependent SoA. Rather, a matrix like *It's crucial* in (5.72) has the pragmatic value that the speaker instructs the hearer to 'note that' the following proposition is the case.

[37] According to Biber et al. (1999: 673), ECs with importance adjectives always assess the significance of the proposition. However, this general semantic gloss does not cover examples such as (5.72) and (5.73).

[38] Hopper (1991: 22) speaks of "lexical persistence" when the original lexical features of a grammaticalizing construction remain present in it to a certain degree. The differences in the Present-day English uses of the future markers *will*, *shall* and *be going to*, for instance, "can be understood as continuations of their original lexical meanings" (Bybee and Pagliuca 1985: 117).

However, in a number of PDE examples with *important* such as (5.74) and (5.75), the SoA referred to is *itself* judged to be important.

(5.74) 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)

(5.75) <F11> Erm I've been married for over twenty years <F01> Yes <F11> twelve of which erm I knew my husband was gay <F01> Right <F11> Erm and we handled it as best we could <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> Yes <F11> because we both w he's actually said to me that he loves me. [...]<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)

In (5.74) the SoA that Jesus was a male is evaluated 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*. Likewise, in (5.75) 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 (5.74) and (5.75) show that ECs with *important* have developed a more general commentative reading in which the significance of an SoA as such is evaluated.

Can this purely evaluative use of the construction with single propositional complement also be seen as the outcome of the A > A + B > B path? I believe that this is the most plausible hypothesis in view of the prior emergence and continued strong dominance of the combined pattern over the propositional pattern throughout the diachronic stages. Presumably, once, as a result of the A > A + B > B path, ECs with *important* and single propositional complement were established, the pragmatic value of the hearer being made to focus mentally on the proposition faded away in some contexts.

2.4.2 The adjectives of appropriateness

The adjectives of appropriateness followed a different path. Although 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 (5.72) and (5.73) above. Rather, a case can be made for the primary propositional complements having developed from primary mandative complements via bridging contexts.

The earliest **bridging contexts** have an infinitival complement with *proper*, as in (5.76) and (5.77). As we saw in the synchronic description (section 2.2.2.2, Tables 5.9 and 5.10), in the data infinitival propositions occur only with the weak adjectives, not with the strong ones. The examples below involve hypothetical constructions with a perfect *to*-infinitive.

(5.76) How many probable Casualties intervene in opposition to the main Design, viz. of marrying two Couple so oddly engaged in an intricate Amour, I leave the Reader at his leisure to consider: As also whether every Obstacle does not in the progress of the Story act as subservient to that purpose, which at first it seems to oppose. In a Comedy this would be called the Unity of Action; here it may pretend to no more than an Unity of Contrivance. The Scene is continued in Florence from the commencement of the Amour; and the time from first to last is but three days. 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*)

(5.77) Then it was that he felt the consequence of his pridefulness towards me; [...] he came, and in a vehement manner cried to me for the love of heaven to come to his assistance, and pacify the people. It would not have been **proper** in me to have refused; so out I went in the very nick of time: for when I got to the door, there was the soldiers in battle array, coming marching with fife and drum up the gait with Major Blaze at their head, red and furious in the face, and bent on some bloody business. (CLMETEV 1823 Galt, *The provost*)

In (5.76) the state of affairs described by the *for...to*-infinitive is part of the apodosis of a conditional: 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 focus 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, enabling 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. Similarly, in (5.77) the matrix *it would not have been proper* can be understood as evaluating the hypothetical anterior SoA referred to by the *to*-complement, viz. 'my having refused'. The matrix can also be interpreted as judging that SoA morally unacceptable, viz. 'it was not proper for me to refuse', 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 found in *that*-clauses, typically with *should*, which can be used in its attitudinal or mandative sense (cf. Huddleston and Pullum 2002: 995, 1001). Examples with *fitting* and *proper* are given below.

(5.78) A Lawyer is an honest Employment, so is mine. Like me too he acts in a double Capacity, both against Rogues and for 'em; for 't is but **fitting** that we should protect and encourage Cheats, since we live by them. (CLMETEV 1728 Gay, *The beggar's opera*)

(5.79) 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*)

The EC in (5.78) can be read as an ironic comment on the fact that all lawyers, as well as the speaker, protect and encourage cheats. The speaker thinks it is fitting that they actually do so, as it enables them to make a living. In this reading, the form *should* is used in its attitudinal sense, and the *that*-clause functions as a propositional complement. However, (5.78) can also be read as a mandative construction: the speaker thinks it is fitting or morally desirable to protect and encourage cheats, as he owes them his living. In this interpretation, 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 indicates that it has been actualized or is being actualized, but at the same time the SoA is also still potential, as it is not certain that it will continue to be actualized. Example (5.79) equally allows both for a propositional and 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 read 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 (5.78)–(5.79) and (5.76)–(5.77) 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*.

Fitting and *proper* illustrate that the transitional stage involving bridging contexts may cover a few periods, i.e. that it may take some time before we find unambiguous propositional complements. With both adjectives, bridging contexts are found from 1710–1780 on, but unambiguous examples such as (5.80) and (5.81) appear only in 1850–1920.

(5.80) 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. Such eyes he had seen in great pictures but never in a mortal. 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*)

(5.81) 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 (5.80), the narrator describes a scene in which Miss Abbott chastely kisses Philip, an event that is evaluated positively. In (5.81), the fact that Nella is on the water has been explicitly mentioned in the preceding discourse, and the narrator evaluates it as right and proper (either from an omniscient point of view, or through the eyes of Nella). These examples comment on facts, and unlike in the cases of (5.78) and (5.79) it is hard to think of deontic interpretations in which these events are thought desirable. Neither are there 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 5.19). Therefore, the examples in (5.80) and (5.81) show that the propositional reading has become associated with the adjectives as a distinct reading.

From the discussion above, it can be concluded that the path followed by the appropriateness adjectives basically fits 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. As the appropriateness adjectives have all manifested the combined pattern from relatively early on, one could still speculate that, by associating a proposition with the appropriateness adjectives, the mandative-propositional pattern helped pave the way for the construction with single propositional complement at a very abstract constructional level. However, more than this sort of indirect influence cannot be ascribed to the combined pattern, which is numerically rather peripheral with the appropriateness adjectives and has not led to a single proposition use that is semantically akin to the combined pattern, viz. one in which the hearer is made to focus mentally on that proposition.

With regard to the single proposition construction, the most recent data suggest that a further development has taken place, viz. the emergence of a **specialized use** of B. In this specialized use, an aspect of the SoA in the 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 chapter 6, section 1.2.2). For instance, in example (5.50) above it is pointed out to the readers that the re-opening of the Royal Opera House with *Sleeping Beauty* was proper because Covent Garden was also re-opened with this ballet just after the Second World War. Comparable examples with *appropriate* and *fitting* are:

(5.82) "It is great to see a symbol such as this, a proud product of Scottish shipbuilding return to a Scottish berth. We can all be proud today. Britannia will be a great centrepiece for Leith and for Edinburgh." [...] Edinburgh's Lord Provost Eric Milligan brought cheers from the small but vocal crowd when he added: "It is most **appropriate** that a Scots-built ship is returned here to Scotland. We are bringing her to familiar water and a city that is proud of its royal connections." (CB, sunnow)

(5.83) [...] Mrs Atul Amersey's husband is one of these, from a prominent business family in Bombay, while the Chairperson Narindar Saroop is the First Asian Tory Parliamentary candidate to have fought a general election in this century. It was entirely **fitting** that the Appeal was launched in the Locarno Room of the Foreign & Commonwealth Office Building, formerly the India Office, where the East India Company directors functioned and held their board meetings. (CB, ukmags)

Just as in all the previous developmental stages (i.e., A, A/B, and B), this recent specialized use is found with both *that*-clauses, as in (5.82) and (5.83), and *to*-clauses, as in (5.84) below. This example is taken from a letter to *The Times* about a special set of stamps celebrating the work of Robert Burns that will be issued soon. In it the writer explains why he thinks it is fitting that the song *Auld Lang Syne* will be featured on the stamp with an overseas postage rate.

(5.84) 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 apart from the more general evaluative meaning as in, for instance, (5.80) above, ECs with appropriateness adjectives and propositional complements have developed a specialized use in which contextual links play a major part. In fact, this specialized use has become the predominant one with *appropriate* and *fitting*, as will be shown in chapter 6, section 1.2.2. However, the micro-processes leading to the specialized semantics of this recent pattern still need to be unravelled.

It is interesting to note that *important*, which, like *fitting*, is found with a single proposition only from 1850–1920 on, seems to be manifesting this construction in Present-day English as well, albeit very marginally, as shown in (5.85) below. This suggests that there is also some interaction, allowing **analogies** to take effect, between the distinct developmental paths of propositional complements with the importance and appropriateness adjectives, which have been presented in this section.

(5.85) 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)

2.5 General conclusions

This section has investigated the clausal complement patterns of a set of six adjectives in extraposition constructions (ECs), a topic which has been covered inadequately in the literature so far. It is based on qualitative and quantitative analyses of synchronic and diachronic corpus data with the importance adjectives *important*, *essential* and *crucial*, and the appropriateness adjectives *appropriate*, *proper* and *fitting*. The synchronic description has adduced 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. The semantic parameters looked at also showed that from the perspective of complementation, there is little difference between the complement relations established in dynamic and deontic constructions, or more generally between the situating and attitudinal categories in the conceptual map. In addition, the synchronic decription has elucidated the current distribution of complementation patterns. In what follows, I summarize these findings from a diachronic perspective, as the diachronic part (sections 2.3 and 2.4) shed fundamental light on the synchronic distribution (section 2.2).

Apart from *crucial*, all the adjectives studied in ECs 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). In general, these mandative complements were and are typically coded by *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 chapter 4, section 2.3.

This original predominance of mandative complements was somewhat encroached upon by the gradual emergence of **propositional complements**. The diachronic data have shown that this new semantic type of complement has developed along different paths with the two lexical classes. With the **importance adjectives**, propositions appeared first as secondary complements of primary mandative complements containing cognition or verbalization predicates such as *observe*, *remember*, *note*, *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 have primarily deontic meaning, expressing the desirability of 'considering' or 'communicating about' the secondary propositional complement. This path further continued as a development of the mandative-propositional

pattern: in certain contexts the mandative predicate was dropped, but its value still pragmatically persisted, e.g. *it's crucial as well that he's pissed* (CB, ukspok). I have argued that the pragmatic value of urging the hearer to focus mentally on the proposition still characterizes current examples with a primary propositional complement. Importantly, it characterizes 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). I have interpreted this development of propositional complements with the importance adjectives in terms of the path **A > A + B > B**: the extension from primary mandative to primary propositional complement came about through the combined pattern. 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 combined mandative-propositional pattern at some stage. This fact may have contributed at an abstract constructional level to their taking single propositional complements. More importantly, however, the diachronic data have shown that all appropriateness adjectives were first found with primary complements forming bridging contexts before they appeared with genuine propositional complements. They thus followed the well-established **A > A/B > B** path, with the two formal complement types (*that*-clauses and *to*-clauses) occurring at each stage. In addition to propositional complements, the three adjectives still combine with mandative complements in PDE. With *proper* and *appropriate*, mandative complementation even predominates, but less strongly so than with the importance adjectives.

The two paths summarized above can be visualized as in Figure 5.2. From the primary mandative complements, two pathways have branched off, associated with the two lexical classes of adjectives studied here. Apart from their common start as mandative complement-taking predicates, members of the two adjective classes continue to manifest constructional analogy, represented by the symbol ~, between some constructions that are part of the distinct paths towards propositional complements. Figure 5.2 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.

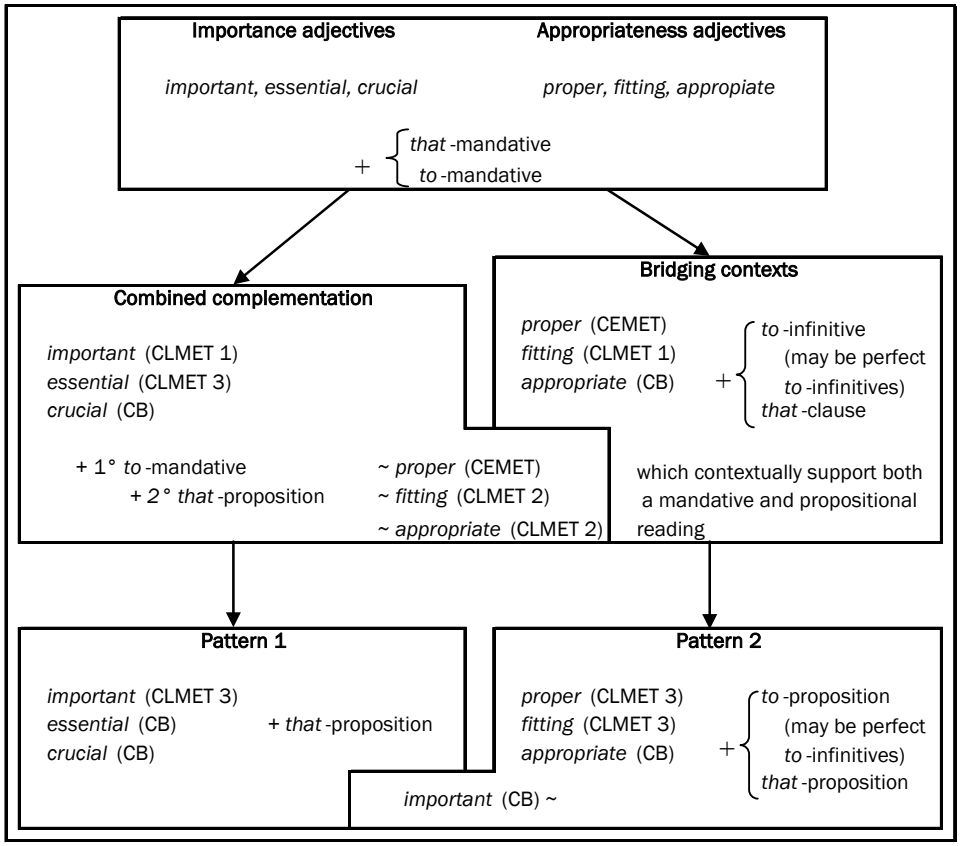

Figure 5.2: The development of propositional complements with the importance and appropriateness adjectives (CLMET 1: CLMETEV 1710–1780; CLMET 2: CLMETEV 1780–1850; CLMET 3: CLMETEV 1850–1920)

The discussion above has charted the main lines of the diachronic development leading to the current synchronic system of complementation with importance and appropriateness adjectives. In the process, some diachronic mechanisms were looked at which warrant further theoretical reflection, such as pragmatic persistence and the developmental schema in which the combination of A + B rather than the more generally invoked bridging from A to B forms the crucial transitional step. The development of the complementation of the adjectives in ECs also clearly involves 'interlocking' paths (see Vandewinkel and Davidse 2008) linking importance and appropriateness adjectives, as manifested most clearly by their very similar pattern of mandative complementation. Interlocking of paths was also observed in their inclination to constructional analogy, as with the combined mandative-propositional pattern and the specialized 'precedent/analogue' propositional complements, which are associated mainly with one class 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 explored in future work.

3 Conclusions from the two case-studies

Apart from their intrinsic interest for the study of complementation, the two case-studies presented in this chapter have also elaborated on the distinctions at work in the conceptual map. In particular, they have brought into the picture the functional analysis of the clause as a layered structure. In addition, the second study has related the conceptual distinctions on the vertical axis of the map with insights from the typological literature on complementation. Importantly, the two studies have also adduced evidence for the cross-constructional and diachronic validity of the conceptual map.

The **functional model** of the clause had already been touched on in chapter 1, sections 1.2.1 and 2.2.2, but in an implicit way. In this chapter, it has become clear that the analysis is useful in delineating various types of meaning. In the study on the PAC, the model has been used to explain the difference in evaluative meaning in non-modal evaluative ECs and characteristic-oriented PACs: the first operates at the propositional layer (and involves interpersonally subjective meaning, cf. De Smet and Verstraete 2006), whereas the second functions at the predicate layer (and involves ideationally subjective meaning, cf. De Smet and Verstraete 2006). In the second study, the functional model appeared in the discussion of the cross-linguistic parameters of complement relations. More precisely, non-modal evaluative constructions (or commentative relations, cf. Noonan 2007: 127–128) were found to differ from dynamic and deontic expressions (or modal and/or desiderative relations, cf. Noonan 2007: 132–139) in terms of the level of clause structure at which the complement relation is established, viz. at proposition versus predication level (Cristofaro 2003: 110–111). Together, the studies have thus pointed to the levels of clause structure at which the various conceptual categories in the map operate. These levels have been included in Figure 5.3 below.

Apart from the level of clause structure, the second case-study has also investigated two other parameters that are used in the typological literature to distinguish between various types of complement relations, viz. semantic dependency and semantic integration. Importantly, it has been shown that in terms of complement relations the most salient distinction on the vertical axis of the conceptual map is that between modal and non-modal categories. In fact, these have different values across all three parameters (see section 2.2.1). Within the modal categories, the distinction between dynamic and deontic expressions only involves a difference in degree of semantic integration (in the case we regard deontic matrices as desiderative predicates, and not as modal ones). In chapter 1 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 in contrast with insights from the domain of complementation discussed and developed in this chapter, according to which the parameter of the **factuality status** is far more salient

than the first one. In the next and final chapter, detailed study of Present-day English complement patterns will basically arrive at the same conclusion.

The two case-studies presented in this chapter each have offered arguments in favour of the conceptual map as well. Concentrating on a construction different from the EC, viz. the post-adjectival *to*-infinitive construction, the first study has adduced **cross-constructional** evidence for the map. Its findings are visualized in Figure 5.3 below. In general, I have shown that the constructions that are traditionally analysed as *tough*-constructions can be divided into two semantically and syntactically distinct types, viz. activity- and characteristic-oriented constructions. In the first one, the adjective modifies an activity, which makes an extraposition paraphrase felicitous and triggers a deontic type of interpretation. In the second one, the adjective modifies an entity, which triggers a purely evaluative meaning. This evaluative meaning is not included in the conceptual map as presented in chapter 1, section 2.3.1, but I have added a dashed box in Figure 5.3 to fit it in. Its position below the other conceptual categories corresponds iconically to the lower level of clause structure at which it operates. Interestingly, it was found that the distribution of adjectives across the two types of construction is lexico-semantically determined in much the same way as in the extraposition construction. As can be seen in Figure 5.3, strong adjectives occur in the activity-oriented PAC only, whereas weak adjectives are found in the two construction types. The adjectives' potential to express deontic and/or evaluative meaning in the PAC is thus identical to that in the SLC/EC. We can therefore conclude that the lexico-semantic and conceptual distinctions at work in the SLC/EC also apply to the PAC, and more generally, that the conceptual map applies across at least two different constructions.

The second study has concentrated on the development of propositional complements from mandative ones, and hence has offered arguments in favour of the diachronic validity of the conceptual map. In particular, focusing on a set of importance adjectives (strong *essential* and *crucial*, and weak *important*) and one of appropriateness adjectives (weak *appropriate*, *proper* and *fitting*), it has proposed two pathways of change to the propositional pattern, which are represented in the conceptual map in Figure 5.4. The diachronic and synchronic distributions of mandative (A), mandative-propositional (A + B), propositional (B), and bridging context patterns (A/B) have shown that these two pathways are associated with the two adjective classes. The importance adjectives followed an A > A + B > B path, characterized by pragmatic persistence (cf. Hopper 1991: 20). Due to B's pragmatic value of making the hearer focus mentally on the proposition, the strong adjectives *essential* and *crucial* do not present us with true counterevidence for the lexical boundaries of the conceptual map. In Figure 5.4, the dashed box of this mental focus pattern indicates that it is different from the B-pattern acquired by the adjectives of appropriateness. These followed the costumary A > A/B > B path (Traugott and Dasher 2002), and also developed a specialized use of the B-pattern in PDE, which relates the SoA in the proposition to contextual elements, such as, for example, an historical precedent. Finally, it was also noted that the two pathways may have influenced each other at several stages, indicated by the symbol ~ in Figure 5.4.

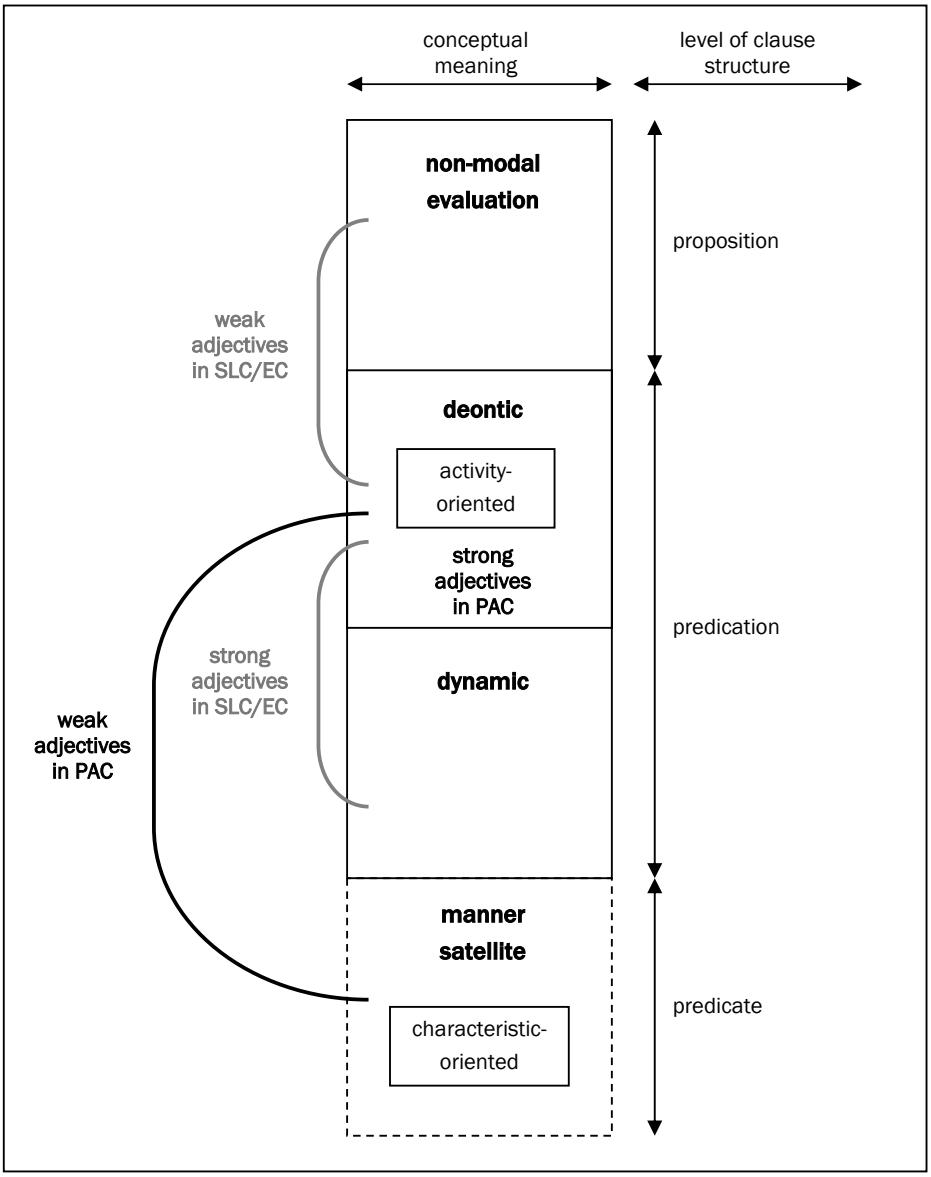

Figure 5.3: Weak and strong adjectives in the subjectless/extraposition construction (SLC/EC) and post-adjectival *to*-infinitive construction (PAC)

With the study of the development of propositional complements, we have reached the final diachronic contribution to this thesis. In fact, together with the case-studies presented in chapter 3, this study has revealed the **diachronic relations** between the modal-evaluative categories in the conceptual map. The major diachronic conclusions of this thesis are summarized in Figure 5.4. It can be noted immediately that all arrows point

upwards. On the basis of the diachronic case-studies, we could thus posit the following pathway: lexical item > dynamic modality > deontic modality > non-modal evaluation. However, unlike the pathways observed for modal auxiliaries (see chapter 1, 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 studied are all from group C (see section 2.1 and chapter 3, section 1), i.e., they all came into the English language 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 persisters such as *good* respectively. However, if we take into account the distinction between weak and strong adjectives, we can recast the overall pathway 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.

(5.86) **The conceptual hierarchy of strong adjectives**
dynamic modality > deontic modality

(5.87) **The conceptual hierarchy of weak adjectives**
deontic modality > non-modal evaluation

The hierarchy in (5.86) 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 (5.87): 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 concluded that it can also be used to express non-modal evaluation). In summary, 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.

The present chapter and the other diachronically oriented chapters have already shown and explained many aspects of the Present-day English adjectival constructions. Focusing on the semantic development of the adjectival matrix (chapter 3) and the patterns of complementation (chapters 4 and 5), they have not only corroborated the diachronic validity of the conceptual map, but they have also contributed to a better understanding of its general or synchronic validity. It is this topic that will be central to the next and final chapter. More precisely, it will present a detailed synchronic account of the various types of constructions in which the adjectives are currently used. It will synthesize the matrix-focused approach of chapter 3 and the complement-focused approach of chapters 4 and 5, and it will concentrate on the constructional whole of matrix and

complement. In this way, it seeks to refine the conceptual distinctions that we have seen at work in the conceptual map so far.

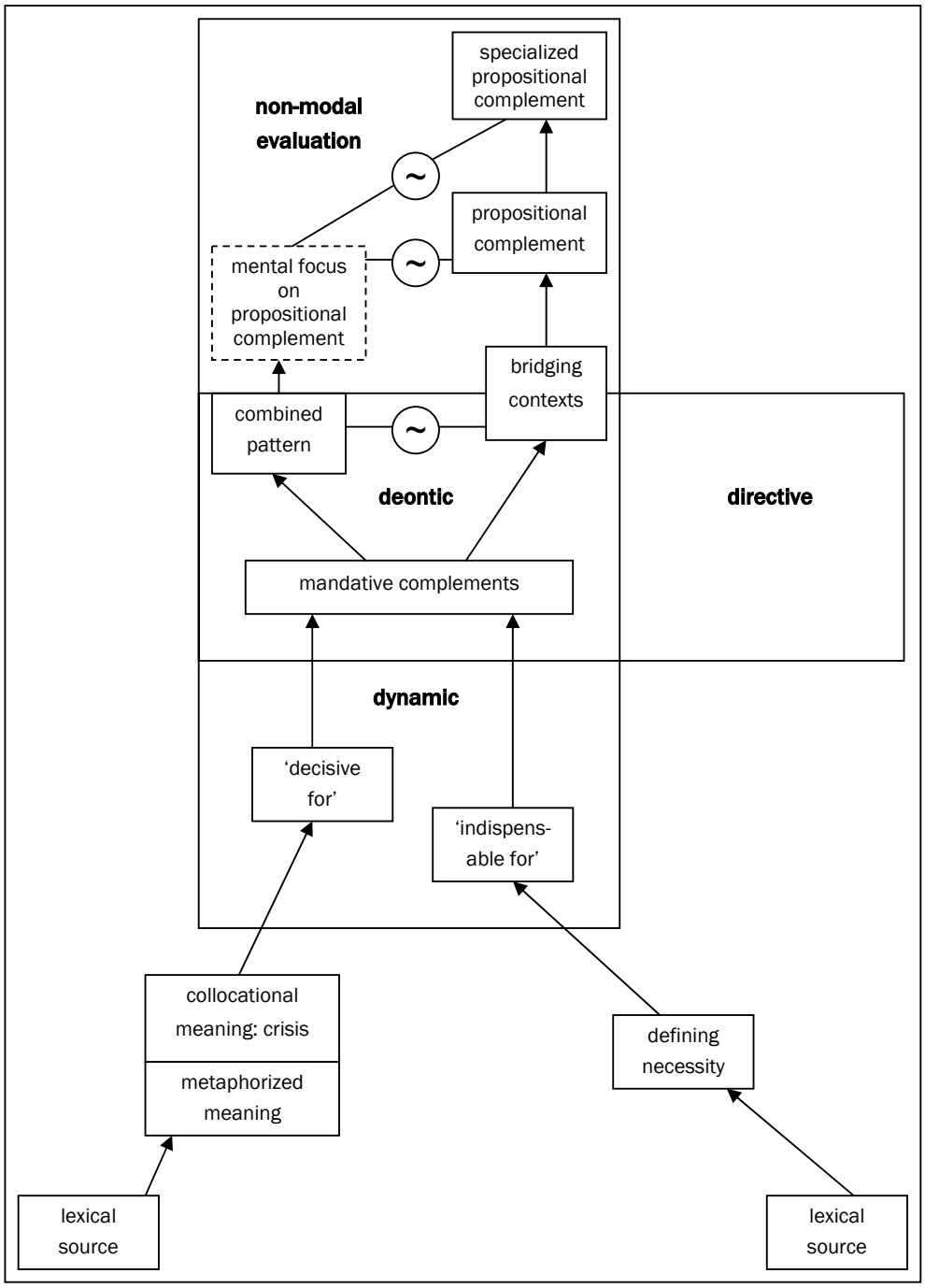

Figure 5.4: The diachronic relations between the modal-evaluative categories in the conceptual map

Chapter 6
Synchronic constructions: Refinements of the conceptual map

This final chapter concentrates on Present-day English and aims to refine the conceptual categories represented in the conceptual map (see chapter 1, section 2.3.1). In particular, it looks at the internal organization of the various categories and it will propose subcategories 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 5, and I will argue that the distinction between deontic and dynamic modality is not as hard and fast as presented in the literature (e.g. Nuyts 2005). To explain this problem of delineation, I will draw on my diachronic analysis of the adjectival matrices put forward in chapter 3. In addition to the three qualificational categories, I will also discuss the illocutionary type of meaning included in the conceptual map, viz. directive meaning. Thus, this chapter elaborates on the synchronic validity of the conceptual map.

Whereas the previous chapters focused either on the adjectival matrix (chapter 3) or on the patterns of complementation (especially chapter 4), the present chapter studies the [matrix + complement] construction as a whole (see also chapter 5, section 2.4). 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.

This chapter is structured as follows: it starts with the qualificational categories and moves through the conceptual map from top to bottom. Thus, section 1 discusses the category of non-modal evaluative meaning. Building on the insights from chapter 5, section 2.4.2, section 2 looks at constructions bridging non-modal evaluative and deontic meaning. Section 3 deals with both deontic and dynamic modality and focuses on the distinction between the two. After the qualificational categories, I will discuss the illocutionary type of directive meaning in section 4. Section 5, finally, summarizes the discussions and incorporates the main conclusions in the conceptual map.

The discussion below is based on two types of analysis, as described in chapter 2, section 3. The most comprehensive analysis is a qualitative and quantitative study of 22 adjectives repeated in Table 6.1 below, in either exhaustive samples (smaller than 200), or random samples of 200 instances from the COBUILD corpus. In addition, I used a type of collostructional analysis, viz. a multiple distinctive collexeme analysis (Gries and Stefanowitsch 2004). This analysis is based on exhaustive extractions of the same 22 adjectives from the COBUILD corpus, but includes only constructions with extraposed *to*-clauses. In particular, it looks at which lexical items (*to*-infinitives) collocate with the various adjectives and to which degree they do so (see chapter 2, section 3).

	weak adjectives (12)		strong adjectives (10)	
used to express qualificational meaning	*appropriate* *convenient* *desirable* *expedient* *fit* *fitting*	*good* *important* *profitable* *proper* *suitable*	*critical* *crucial* *essential* *indispensable*	*necessary* *needful* *vital*
used to express illocutionary meaning	*advisable*		*compulsory* *mandatory*	*obligatory*

Table 6.1: The weak and strong adjectives studied in chapter 6

1 Non-modal evaluation

As discussed in several places above (e.g. chapter 1, section 2.2.3; chapter 5, section 2.2.1), 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 (5.50) and (5.51) in chapter 5, section 2.2.1).

(6.1) 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. You may be the one for him but on the evidence you have to be wary. It's **good** that he has been honest but you have to look to your future emotional security and sexual health. (CB, sunnow)

(6.2) Next Sunday's Derry v Monaghan showdown at Croke Park will give both sets of players a chance to get to know each other as the counties meet again in the Championship in two months time. 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 and there's nothing we can do about it.” (CB, sunnow)

In (6.1), 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 (6.2), by contrast, the SoA referred to in the propositional *to*-clause has not taken place yet at the moment of assessment: the two teams still have to meet next Sunday, which is in fact close to the Championship (in two months’ time). 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 (6.1), 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 (6.1) and (6.2)) or negatively factual (see chapter 1, section 2.2.3).

As already indicated in chapter 5, section 2.4, the category of non-modal evaluation includes two types of meaning. One type has the pragmatic value of making the hearer focus mentally on the proposition, as in (6.3) and (6.4) below. Thus it can hardly be considered as expressing true non-modal evaluative meaning. In addition, it is very infrequent as well. By contrast, the other type distinguished here, illustrated in (6.1) and (6.2), is genuinely evaluative. This type predominates in Present-day English, and apart from general commentative expressions as in (6.1), it also includes more specific types of evaluative meaning, such as, for example, the specialized use introduced in chapter 5, section 2.4.2 above (e.g. (5.83) to (5.84)). In what follows, section 1.1 will discuss the mental focus type, and section 1.2 will concentrate on the genuine evaluative type and its subtypes.

1.1 Mental focus on proposition

As pointed out in chapter 5, section 2.4.1, 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. In the sample, this type of construction is very infrequent (4 instances in total), and the examples given below repeat those given above ((6.3) repeats (5.73); (6.4) repeats (3.23)).

(6.3) 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)

(6.4) Each time that I V F 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 I V F 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. <ZF1> 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 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)

It can be argued that in (6.3), the speaker does not want to represent his intention to reach as many people as possible, as important or significant. Rather, he wants the hearer

to take a mental note of this intention. Likewise, in (6.4), the speaker wants to call the hearer's attention to the fact that in the experiment talked about it is human embryos which are studied rather than, for example, mouse embryos. The construction used in the propositional complement, viz. an *it*-cleft, gives extra prominence to the most important piece of information, viz. *human*. In the final *because*-clause, the speaker provides justification for this focus on *human* embryos.[1]

The specific nature of the mental focus type already suggests that not all adjectives studied here qualify for this type. In fact, the type is restricted to some **Importance adjectives** in the sample, viz. *crucial*, *essential* and *important*. Furthermore, the nature and origin of the type (see chapter 5, section 2.4.1) can explain a number of formal and 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 said to originate.

(6.5) 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. Although you may be adamantly against certain procedures now, you may change your mind once you're in labour. (CB, ukmags)

As will be discussed in section 3.1.2 below, this type of deontic construction has an argumentative function: the speaker uses this construction to make the hearer focus on the secondary proposition (viz. 'childbirth is never predictable'). We can thus see that the mental focus type has a close pragmatic correspondence to 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 finites; 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,[2] 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

[1] *Because* is used here in a coordinate rather than subordinate construction type: the *because*-clause serves "to justify some aspect of the speech act in the main clause", rather than to indicate a relation of reason or cause-and-effect between the SoA described in the main clause and the one described in the subclause (e.g., I missed the train because I was late) (Verstraete 2007: 198; cf. Goethals 2002: 111–143). Crucially, coordinate *because*-clauses have their own illocutionary force and they are open to challenge by the hearer (e.g., Has it really been found that the human embryo has quite different growth requirements than those of other mammals?) (Verstraete 2007: 150–151, 198).

[2] Unlike in chapter 5, sections 2.2.3 and 2.4, I here distinguish between secondary complements that are *that*-clauses (either mandative or propositional ones), and those that indirect questions (see section 3.1.2 below).

(see section 3.1.2 below). A second parallel involves the matrices of both constructions. The matrices of the mental focus type all have present indicative copular finites, 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 verbal predicates (e.g., *say*, *tell*, *stress*) rather than mental ones (e.g., *remember*, *note*, *realize*), see section 3.1.2). In addition, the matrix finites 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 (6.6) below, I present the negated version of (6.5) above.

(6.6) ? 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 6.2) which pragmatically resembles specific deontic examples with combined complementation. In both types the speaker urges the hearer to focus mentally on the propositional complement (or, in the case of the deontic combined constructions, also mandative complement). This pragmatic property explains the polarity and TAM marking of the matrix finite: all examples have affirmative present indicative matrices, cf. Table 6.3. The abbreviations used in this and the following tables are: Fr: frequency; n: absolute frequency; %: relative share.

Adjective	Number of occurrences in the sample	Number of non-modal evaluative uses	Number of mental focus uses			% of mental focus uses	
			that	*to*	total	relative to sample	relative to NME
crucial	52	2	2	0	2	3.85	100.00
essential	200	1	1	0	1	0.50	100.00
important	200	6	1	0	1	0.50	16.67
total	452	9	4	0	4	0.88	44.44

Table 6.2: The adjectives occurring in the mental focus type (NME: non-modal evaluative use)

Type of finite	Fr	indicative present
matrix (4)	n	4
	%	100.00
that-clause (4)	n	4
	%	100.00

Table 6.3: The formal properties of matrix and *that*-clause finites of the mental focus type

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. As explained above, 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*.

In this section, I will show that non-modal evaluative expressions are very diverse in terms of formal and semantic properties, much more so than the mental focus type. Importantly, I will also argue that within this heterogeneous category we can distinguish three more specific subtypes with typical constructional patterns, viz. a specialized use (introduced in chapter 5, section 2.4.2) (section 1.2.2), a locative use (section 1.2.3), and a knowledge/acquisition of knowledge (KAK) use (section 1.2.4). Before I move on to these specific types, I will first focus on the general commentative use.

1.2.1 General use

This section deals with expressions whose semantics is subsumed under the general definition of non-modal evaluative meaning given above. Unlike the subtypes discussed below, this set of examples features all the weak adjectives of the sample (except the adjectives mentioned above, viz. *desirable*, *expedient*, *fit*, *profitable* and *suitable*). Apart from a variety of lexical items, this set also shows **diversity** in matrix construction type, matrix finite type, and complement type, as described below.

First, the general category discussed here includes examples of two matrix construction types, viz. the copular extraposition construction (63 hits) and the complex transitive construction (3 hits) (see chapter 4, section 1.2). Examples are given in (6.7) and (6.8) respectively.

(6.7) I mean I think <ZF1> the <ZF0> the reason why the sort of third wave U D Cs [Urban Development Corporations, AVL] actually involved community liaison officers and had community development on its agenda was because of some of the reaction to London documents. <F01> Mm. <M01> Erm I think that money has gone to erm <ZZ1> place name <ZZ0> erm group the Forum erm think they have you know some influence and have had some influence over <ZF1> the er erm <ZF0> the work of the U D C erm and it's been **convenient** for the U D C that that organization has existed 'cos it's meant <F01> Mm. <M01> 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)

(6.8) Ignoring the pain, she walked towards the main street. 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)

Secondly, we also find variety in the TAM marking of the matrix finites. In particular, the finites can be indicative forms, such as present indicative (6.1), present perfect indicative (6.7) or past indicative (6.8), as well as modalized forms, such as *may* in (6.9).

(6.9) With the old guard out of the way, the administration now carries a much less dated look under Stapleford and, with 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. It will be some time before the new broom sweeps clean but there is a hope indeed an expectation, that a new spirit will at least imbue the proceedings in Basingstoke this week. (CB, times)

In this example, the attitudinal source expresses an epistemic assessment of his/her non-modal evaluative assessment of a propositional content (that is, the epistemic modal has the non-modal evaluative expression in its scope). More specifically, 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.

Thirdly, the examples expressing general non-modal evaluation also show a diversity of complement types, as they are found with both *that*-clauses and *to*-clauses (cf. (6.1) and (6.2) respectively). The set of propositional *that*-clause constructions, finally, shows a wide range of finite forms. Just like the matrix finites discussed above, the complement finites include indicative forms, such as, for instance, present perfect indicative (6.1), (6.7) and (6.9), or past indicative (6.10), as well as modalized forms, such as *should* in (6.8) and *could* in (6.11) below.

(6.10) 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)

(6.11) But erm I think it's all stopped now anyway. The road's going ahead some time and campaigning's over <F01> 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 6.4 below. Table 6.5 details the formal diversity of the matrix and complement finites. It will become clear in the next sections that the specific subtypes are more restricted, both lexically and morpho-syntactically.

Adjective	Number of occurrences in the sample	Number of non-modal evaluative uses	Number of general uses			% of general uses	
			that	*to*	tot	relative to sample	relative to NME
appropriate	133	35	4	1	5	3.76	14.29
convenient	33	1	1	0	1	3.03	100.00
fitting	37	31	7	0	7	18.92	22.58
good	200	123	32	17	49	24.50	39.84
important	200	6	3	0	3	1.50	50.00
proper	25	3	1	1	2	8.00	66.67
total	628	199	48	19	67	10.67	33.67

Table 6.4: The adjectives occurring in the general type (NME: non-modal evaluative use)

Type of finite	Fr	Indicative forms			Modalized forms					
		pres	pres perf	past	*can*	*will*	*may*	*could*	*would*	*should*
matrix	n	42	2	18	1	2	1	0	1	0
(67)	%	62.69	2.99	26.87	1.49	2.99	1.49	0.00	1.49	0.00
that-clause	n	18	11	12	1	2	0	1	0	3
(48)	%	37.50	22.92	25.00	2.08	4.17	0.00	2.08	0.00	6.25

Table 6.5: The formal properties of matrix and *that*-clause finites of the general type

1.2.2 Specialized use

The semantics of the specialized use has already been discussed in chapter 5, section 2.4.2. More precisely, in this use, a propositional content is evaluated as fitting or appropriate in view of a **particular context**, such as historical facts or specific characteristics typical of (one of) the participants in the SoA referred to in the proposition. Examples are given below.

(6.12) John Perrett is a first-order Fairmile enthusiast. […] A third craft, Western Lady (RML 535) built by W Weatherhead of Cockenzie in Scotland, was also used on ferry duties. During one of her annual refits the bridge floor timbers were removed for replacement only to reveal a handful of live and spent .303 matching gun shells. Sadly, passenger volume dropped to the point where it was no loner [sic, AVL] viable to keep her in service. Today she is laid up at Galmpton yard. 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. Perrett bought the craft from Stanley Hall, who had acquired the Bs through Admiralty auctions after the War. (CB, ukmags)

(6.13) 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 (6.12), 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 crafts have been built. In this case, the speaker explicitly justifies his/her evaluation in the *since*-clause (cf. *because*-clause in (6.4), section 1.1 above). In (6.13), 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/her assessment. Rather, 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 some ironic flavour.

(6.14) 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. He will be missing for up to six weeks. 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)

As mentioned above, this specific subtype of non-modal evaluative meaning shows **less variety** in lexical items and formal properties than the general type discussed above. In fact, 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 finites, either present ones, as in (6.12) and (6.13), or, slightly more frequently, past ones, as in (6.14). 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 (5.84) in chapter 5, section 2.4.2. The example with *appropriate* is given in (6.15) below. In this example, the speaker, Jo Cutmore, thinks that her arrival at an Equal Opportunities Commission meeting with a nanny and baby is appropriate. She does not justify this evaluation explicitly. Rather, 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.

(6.15) 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 (whose chief executive she had been asked to find). "It seemed **appropriate**, somehow, at an EOC meeting, to arrive with nanny and baby in tow," she chuckles.

Finally, as 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 (viz. present (5.13), present perfect, past and past perfect forms). However, the examples feature only one type of modalized form, viz. attitudinal *should*, as in (4.12) and (4.14) (40.74%, cf. Table 6.7 below).

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 6.6 and 6.7.

Adjective	Number of occurrences in the sample	Number of non-modal evaluative uses	Number of specialized uses			% of specialized uses	
			that	*to*	total	relative to sample	relative to NME
appropriate	133	35	29	1	30	22.56	85.71
fitting	37	31	23	1	24	64.86	77.42
important	200	6	1	0	1	0.50	16.67
proper	25	3	1	0	1	4.00	33.33
total	395	75	54	2	56	14.18	74.67

Table 6.6: The adjectives occurring in the specialized use (NME: non-modal evaluative use)

Type of finite	Fr	Indicative forms				Modalized form
		pres	pres perf	past	past perf	*should*
matrix (56)	n	25	0	31	0	0
	%	44.64	0.00	55.36	0.00	0.00
that-clause (54)	n	9	2	20	1	22
	%	16.67	3.70	37.04	1.85	40.74

Table 6.7: The formal properties of matrix and *that*-clause finites of the specialized use

1.2.3 Locative use

The locative use is a specific subtype of non-modal evaluative construction which involves the attitudinal source, invariably the speaker, assessing his or someone else's spatio-temporal location as good. In fact, 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 (6.16) below), but also associative expressions (to be with someone, as in (6.17)) and perception expressions (to see someone, as in (6.18), rather than to see a particular SoA, see section 1.2.4).

(6.16) Deirdre's luck changed thanks to The Sun's spectacular crusade, which captured the imagination of the nation. [...] A Street source said: "The Sun really brought the terrible injustice of the situation home to everyone. After the newspaper's tireless campaign and the strength of public opinion, the powers-that-be had to free her." Deirdre wrote a touching letter of gratitude to campaigning Sun readers while she was banged up in prison. And last night she gleefully clutched a special Weatherfield edition of The Sun reporting her release. She said: "It's just so **good** to be home. I owe a big thankyou to The Sun's brilliant campaign." (CB, sunnow)

(6.17) 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. I'm looking forward to the Championship. And a late, late thank you to the many GAA fans and officials who phoned me or wrote to me over the last 12 weeks. (CB, sunnow)

(6.18) "Excuse me, could you tell when the next 406 bus leaves for Santa Ana?" a voice said behind him. The phrase. His contact. "I'm afraid the 406 doesn't go to Marlette stopped abruptly when Hector Amaya stepped into view. "It's **good** to see you again, Marlette," Amaya said with an icy smile. Marlette's mind was racing. Was Amaya his contact? Or had he been set up? (CB, ukbooks)

What is characteristic of this use and common to the three examples above is that the evaluative assessment is simultaneous with the realization of the SoA referred to in the propositional *to*-clause. This temporal relation of **simultaneity** is implied by the locative meaning, which is fairly straightforward in expressions such as (6.16) and (6.17). For perception expressions as in (6.18), it has been argued 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 this relation of simultaneity, the locative meaning also implies that the understood subject of the *to*-infinitive has **specific reference**.[3] In particular, in the sample this subject is always coreferential with the speaker, which is in turn coreferential with the attitudinal source.[4]

[3] This specific reference of the understood subject of the *to*-infinitive clearly relates to the notion of control, introduced in chapter 4, section 2.3. However, applied to the adjectival constructions studied here, this notion is still in need of thorough investigation. Therefore, in the remainder of this chapter I will use the distinction between specific and arbitrary reference of the understood infinitival subjects instead of that between controlled and non-controlled interpretations of the *to*-infinitive.

[4] However, this need not always be the case. More precisely, the examples excluded from the sample of 200 instances for *good* include locative expressions in which the understood subject of the *to*-clause is not coreferential with the speaker/attitudinal source, but rather with the referent of

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 type of complement is invariably a *to*-infinitive. Furthermore, the pattern is only found in the copular extraposition construction. The pattern does show some variety in the type of matrix finite, which can be an indicative form (present, present perfect, or past) or the future auxiliary *will*, as illustrated in (6.19) below.

(6.19) Mrs Symonds, whose husband is a pig farmer at Hethersett, Norfolk, is due to attend the inauguration ceremony in April where her status will be blessed by the tribal chief. He cannot write, so official documents are stamped with his thumbprint. 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 (6.19), the matrix finite *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 6.8 and 6.9 below.

Adjective	Number of occurrences in the sample	Number of non-modal evaluative uses	Number of locative uses			% of locative uses	
			that	*to*	total	relative to sample	relative to NME
good	200	123	0	26	26	13.00	21.14

Table 6.8: *Good* occurring in the locative use (NME: non-modal evaluative use)

Type of finite	Fr	Indicative forms			Modalized form
		pres	pres perf	past	*will*
matrix (26)	n	16	1	7	2
	%	61.54	3.85	26.92	7.69

Table 6.9: The formal properties of matrix finites of the locative use

The finding that this locative pattern is typical of *good* is reflected by the results from the **multiple distinctive collexeme analysis**. Table 6.10 shows the ten collexemes that are

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the NP in the *for*-PP preceding the *to*-infinitive. In (i) below, for instance, it is Andreas who will be back in Germany.

(i) 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, ukmags)

most strongly attracted to the *to*-infinitive slot of the extraposed *to*-infinitive construction with ***good***. Table 6.11 gives the results of the same analysis, with the lexical items collapsed into process types (cf. Halliday 1994: ch. 5). As explained in chapter 2, section 3, the smaller the p-value, the stronger the collostruction strength.

Collexeme	Obs. Freq. in A	Obs. Freq. in B	Distinc-tive for:	Fisher Yates p-value	Bonferroni correction
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 6.10: The collexemes most strongly attracted to the *to*-infinitive slot of the extraposed *to*-infinitive construction with *good*

Collexeme: process types	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 6.11: The process types attracted to the *to*-infinitive slot of the extraposed *to*-infinitive construction with *good*

It can be seen in Table 6.10 that the verbs attracted most strongly to the construction studied here (viz. A in the tables) are *see* (p=3.95E-45) and *be* followed by a locative or associative expression (p=4.34E-15). The list also includes the verb *meet*, which is often found in the locative pattern as well (p=2.61E-03). The table thus shows that the frequencies of *see*, *be-locative* and *meet* are significantly higher than what would be expected on a chance level (with α=0.05 as the standard level of significance, cf. Stefanowitsch and Gries 2003: 239, note 6). Table 6.10 also indicates that the results for *see* and *be-locative* remain statistically significant after the Bonferroni correction.[5] Table

[5] The Bonferroni 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, for example, the 22 collostructional analyses here. It is used because uncorrected results of multiple

6.11 shows similar results for the process types. In fact, the frequencies of perception and location are the only ones that are significant, even at corrected level. Thus, compared to the other 21 adjectives included in the multiple distinctive collexeme analysis, *good* stands out as preferring perception and locative processes in the extraposed *to*-infinitive construction. However, it should be noted that not all instances of the verb *see* (and the perception type) are examples of the locative use disussed here. It will become clear in the next section that *see* is also used in the knowledge/acquisition of knowledge pattern.

1.2.4 Knowledge/acquisition of knowledge use

The final subtype of 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). 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 use is attested with two adjectives: it is very frequent with *good*, and it is found only once with *important*,[6] cf. Table 6.12 below. Consider the following examples.

(6.20) He said: "This is just fantastic. It is nice to get something like this after people have judged your performances. I was runner-up in Barnsley's Player of the Season to Ashley Ward. This is a nice consolation. It is **good** to know people have thought you played well." (CB, sunnow)

(6.21) The young pastors, now elderly men, had discharged the responsibility vested in them beyond my father's hopes and prayers. 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)

testing may falsely give the appearance of significance, as 1 out of 20 probability tests will appear to be significant at the α=0.05 level purely due to chance (Stefanowitsch pc). I thus divided the Fisher exact p-values by the number of tests run, viz. 22, to arrive at the corrected p-values.

[6] Arguably, the emergence of the KAK pattern with *important* is a fairly recent development. In Van linden (2008b) I have shown that the first KAK uses with *good* appear in the Late Modern English period. In Present-day English, they are attested with some frequency, cf. Table 6.12. 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 chapter 5, section 2.4.2, it has been argued that it has taken over the specialized use as well, albeit not from *good* in that case.

(6.22) He revealed: "It started slowly at first, but then worked up until I was flat out. I felt much leaner and sharper. It was **good** to hear people telling me I was looking much better - particularly the manager. He has spoken to me in his office two or three times and seems really pleased with the effort I've been putting in." (CB, sunnow)

(6.23) 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. This has been made possible by improved satellite based communications and the deregulation of financial markets. (CB, ukephem)

The examples above all involve a copular matrix and an extraposed *to*-infinitival subject consisting of a KAK predicate and a secondary propositional complement. Note that the non-deliberate perception verbs *see* and *hear* with participial complements are included in this KAK use as well (typically regarded as expressing immediate perception, though, cf. Noonan 2007: 142–144), as sensory perception essentially implies acquisition of knowledge. What is crucial to the KAK use is that it is not so much the SoA encoded by the *to*-infinitive that is evaluated as good or important. Rather, the construction as a whole expresses the speaker's positive evaluation of the propositional content of the **secondary complement**. A similar pattern has been noted by Mair (1990: 25) with matrix predicates assessing truth and probability, such as *true*, *obvious* and *probable*. These matrices are typically complemented by propositional *that*-clauses, but they also occur in constructions with extraposed *to*-clauses containing utterance or propositional attitude predicates (e.g. *say* or *believe*) and secondary *that*-complements, as in (6.24) below.

(6.24) "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 rather the propositional content of the secondary *that*-clause (see also Herriman 2000: 591). This is why Mair calls this construction "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. More precisely, in Mair's (1990) case *to*-clauses such as the one in (6.24) 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 matrix predicates occurring in the KAK pattern. In fact, 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 characteristic of these examples is that the understood infinitival subjects have arbitrary reference, whereas those in the KAK pattern have specific reference, viz. they are coreferential with the speaker (cf. (6.20) to (6.23), just like those in the locative pattern (see section 1.2.3 above).

(6.25) "I've this urge to see something of the world." "Some of the other cities, you mean." "Right. Some other cities." "Well, why not?" asked Soniff, expansively. "The Purples have affiliates in a lot of the cities, and it's always **good** to see the way things get done other places. Why not? I'll see you get your sparrow back, and that should take you a good way. Take a few weeks." (CB, ukbooks)

(6.26) <ZF1> What <ZF0> what <M02> <ZGY> <M01> sort of things <ZF1> have been <ZF0> have been discussed? What kind of input have the police or other departments had? <M02> Erm <tc text=pause> again <ZF1> it's it's <ZF0> it's looking at the effectiveness of <ZF1> the <ZF0> the solutions that <ZF1> we're <ZF0> <M01> Mhm. <M02> we're putting forward. Erm other people's experience may be that those things have been tried elsewhere and do or don't work and it's **important** to know that. Erm they also may be able to generate options that we <ZF1> haven't <ZF0> we haven't thought of. (CB, ukspok)

Apart from **specific reference** of the infinitival subjects, the KAK pattern shares some further properties with the locative pattern. Importantly, the KAK construction also involves **simultaneity** of evaluative assessment and realization of the SoA referred to in the *to*-clause. This property might be related to the presence of a locative component in the KAK pattern as well. In functional accounts, for instance, it has been argued that the semantics of KAK predicates includes a locative element, albeit indirectly: in the first place they have a possessive component to their meaning, which in turn implies a locative aspect (Wierzbicka 1980: 105–114; Foley and Van Valin 1984: 49). However, in cases like (6.27) below, the realization of the KAK *to*-clause must be interpreted as being both anterior to and simultaneous with the evaluative assessment in the temporal zero-point.

(6.27) Tracker funds are the cheapest and most straightforward of all equity investments. They simply invest in a basket of shares which replicate the performance of the chosen index. 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)

In (6.27), the seeing event evaluated as good arguably consists of a range of successive seeing events in a time span that started before and continues into the moment of evaluation, or, in other words, the propositional content evaluated as good is not an event that can be seen at a single glance. The finding that the events referred to (viz. coming into the market with low-cost products, and gaining profits from this business) have taken place in a specific time span rather than at a specific moment suggests that in the KAK construction the meaning of the **predicate *see*** has become somewhat specialized. It is interesting to note that 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.

(6.28) With what reluctance the emperour of Germany would **consent** *to see* troops placed in the provinces bordering upon his dominions [...]. (CLMETEV 1740–1741 Johnson, *Parliamentary Debates*)

(6.29) M Puel said the AIR companies had secured 26-27 per cent of the world market for aircraft from 20 seats to 120 seats last year. Saab of Sweden won a 10 per cent share, while Daimler-Benz of Germany, and its subsidiary Fokker, had achieved a 12 per cent share. 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)

(6.30) Still, Welsh, English, Irish or Hottentot, it is not pleasant to see a whole room full of grown-ups, old people among them, 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. Rather, 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* here has a complementizer-like use. Nevertheless, examples such as (6.28) to (6.30) above 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 3.1.2 below).

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 finites 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 6.12 and 6.13 below.

Adjective	Number of occurrences in the sample	Number of non-modal evaluative uses	Number of KAK uses			% of KAK uses	
			that	*to*	total	relative to sample	relative to NME
good	200	123	0	48	48	24.00	39.02
important	200	6	0	1	1	0.50	16.67
total	400	129	0	49	49	12.25	37.98

Table 6.12: The adjectives occurring in the KAK use (NME: non-modal evaluative use)

Type of finite	Fr	Indicative forms	
		pres	past
matrix (49)	n	41	8
	%	83.67	16.33

Table 6.13: The formal properties of matrix finites of the KAK use

Finally, the observation that the KAK pattern accounts for a relatively large share of the sample instances of *good* (24.00%) (and of the non-modal evaluative uses especially) is confirmed by the results of the **multiple distinctive collexeme analysis**. Table 6.14 not only shows the ten collexemes most strongly attracted to the *to*-infinitive slot of the extraposed *to*-infinitive construction with *good* (cf. Table 6.10), but also the ten collexemes most strongly repelled by it. Table 6.15 does the same with the process types (ten in total) (cf. Table 6.11). However, a distinction is made here 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 1.2.3 above).

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
see	65	20	3.95E-45	8.69E-44	remember	1	51	9.27E-03	2.04E-01
be_locative	21	6	4.34E-15	9.54E-14	try	0	29	2.30E-02	5.05E-01
know	29	48	4.10E-09	9.01E-08	ensure	0	29	2.30E-02	5.05E-01
talk	14	18	6.70E-06	1.48E-04	understand	0	28	2.62E-02	5.76E-01
hear	6	1	1.91E-05	4.20E-04	look	0	24	4.42E-02	9.71E-01
meet	4	2	2.61E-03	5.73E-02	keep_cont.	1	35	5.55E-02	1.22E+00
stretch	2	0	1.47E-02	3.23E-01	say	0	22	5.73E-02	1.26E+00
get_back	2	0	1.47E-02	3.23E-01	have	6	84	6.54E-02	1.44E+00
get_possession	10	29	1.49E-02	3.28E-01	recognize	0	19	8.48E-02	1.87E+00
be_noun	6	12	1.58E-02	3.47E-01	consider	0	19	8.48E-02	1.87E+00

Table 6.14: The collexemes most strongly attracted to and repelled by the *to*-infinitive slot of the extraposed *to*-infinitive construction with *good*

It is clear from Table 6.14 that the KAK predicates rank high in the list of attracted collexemes (*see*, *know*, *hear*). It is also telling 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). These findings explain why cognition verbs end up as a strongly repelled process type, cf. Table 6.15. This table also shows 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. However, the first category still includes examples of the KAK

Distinctive for A (**attracted**)					Distinctive for B (**repelled**)				
Collexeme: process types	Obs. Freq. in A	Obs. Freq. in B	Fisher Yates p-value	Bonferroni correction	Collexeme: process types	Obs. Freq. in A	Obs. Freq. in B	Fisher Yates p-value	Bonferroni correction
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	3.04E-04	6.69E-03
location	21	22	2.47E-09	5.42E-08	utterance	4	98	3.39E-03	7.45E-02
affection	4	18	2.73E-01	6.01E+00	possession	15	151	1.24E-01	2.73E+00
intensive	14	87	3.37E-01	7.42E+00	existential	0	4	5.96E-01	1.31E+01
					behavioural	0	1	8.79E-01	1.93E+01

Table 6.15: The process types attracted to and repelled by the *to*-infinitive slot of the extraposed *to*-infinitive construction with *good*

pattern, for instance those which express the perceived SoA as an action nominal rather than as a clausal complement, as in (6.31) below.

(6.31) No first we went to get erm <F0X> <ZGY> mum <F0X> my sister from the airport <F0X> Oh yeah <F0X> I was on about her <F0X> Oh <F0X> It was quite good <F0X> And then erm when my mum came back we had to go really early in the morning <F0X> Yeah <F0X> What time was it <F0X> About four o'clock <F0X> Yeah <F0X> Yeah <F0X> And er well we all said none of us are going to cry. We all went apart from him and my dad and er when she came er she was in tears and we all <tc text=laughs> ended up in tears as well <F0X> <tc text=laughs> <F01> Mm <F0X> And it was quite good when we went to get my sister and my mum 'cos my nephew's like growing up really quick and it They hadn't seen him for a while and it was really **good** to see you know their reaction to when they see the baby all grown up and doing all these different things. (CB, ukspok)

The collostructional analysis thus provides further evidence for considering the KAK pattern as a **partially filled construction** with a restricted number of lexical elements occurring in two of the six slots (in boxes), as presented in Figure 6.1 below.

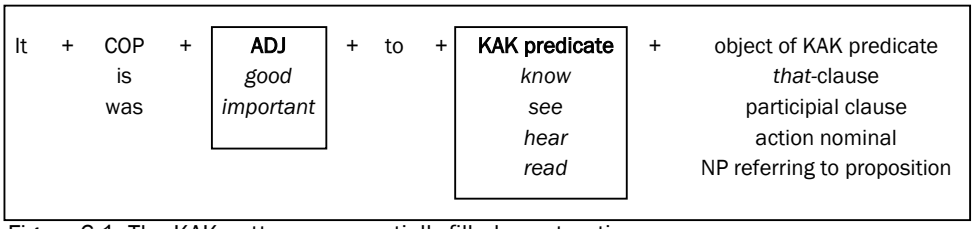

Figure 6.1: The KAK pattern as a partially filled construction

1.3 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/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 (viz. weak *important*, and strong *crucial* and *essential*), whereas the genuine non-modal evaluative type is found with many more adjectives, crucially all weak ones, cf. Table 6.16 below.

Adjective	mental focus use	genuine non-modal evaluative uses			
		general use	specialized use	locative use	KAK use
appropriate	-	+	+	-	-
fitting	-	+	+	-	-
proper	-	+	+	-	-
convenient	-	+	-	-	-
good	-	+	-	+	+
important	+	+	+	-	+
crucial	+	-	-	-	-
essential	+	-	-	-	-

Table 6.16: The types of non-modal evaluative meaning and the adjectives expressing them

Importantly, this section has concentrated not only on conceptual, but also on **formal distinctions**. More precisely, it was shown that the mental focus use shares many properties with the [mandative + secondary complement] construction. The genuine non-modal evaluative category, by contrast, is much more varied. In fact, we distinguished three more specific subtypes, viz. 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 Goldbergian Construction Grammar sense) to an increasing degree. Especially the KAK pattern was argued to be a true – partially filled – construction, whose meaning cannot be compositionally derived. Tables 6.17 and 6.18 show that both the matrix and *that*-clause finites (if applicable) are less diverse in the three subtypes and the mental focus use compared to the general non-modal evaluative use. In general, the discussions above suggest that the internal organization of the non-modal evaluative domain can be represented graphically as in Figure 6.2.

Type of matrix finite	Fr	total	Indicative forms			Modalized forms			
			pres	pres perf	past	*can*	*will*	*may*	*would*
mental	n	4	4	0	0	0	0	0	0
focus	%	100.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
general	n	67	42	2	18	1	2	1	1
use	%	100.00	62.69	2.99	26.87	1.49	2.99	1.49	1.49
specialized	n	56	25	0	31	0	0	0	0
use	%	100.00	44.64	0.00	55.36	0.00	0.00	0.00	0.00
locative	n	26	16	1	7	0	2	0	0
use	%	100.00	61.54	3.85	26.92	0.00	7.69	0.00	0.00
KAK use	n	49	41	0	8	0	0	0	0
	%	100.00	83.67	0.00	16.33	0.00	0.00	0.00	0.00

Table 6.17: The formal properties of matrix finites in the types of non-modal evaluative expressions

Type of *that*-clause finite	Fr	total	Indicative forms				Modalized forms			
			pres	pres perf	past	past perf	*can*	*will*	*could*	*should*
mental	n	4	4	0	0	0	0	0	0	0
focus	%	100.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
general	n	48	18	11	12	0	1	2	1	3
use	%	100.00	37.50	22.92	25.00	0	2.08	4.17	2.08	6.25
specialized	n	54	9	2	20	1	0	0	0	22
use	%	100	16.67	3.70	37.04	1.85	0.00	0.00	0.00	40.74

Table 6.18: The formal properties of *that*-clause finites in the types of non-modal evaluative expressions

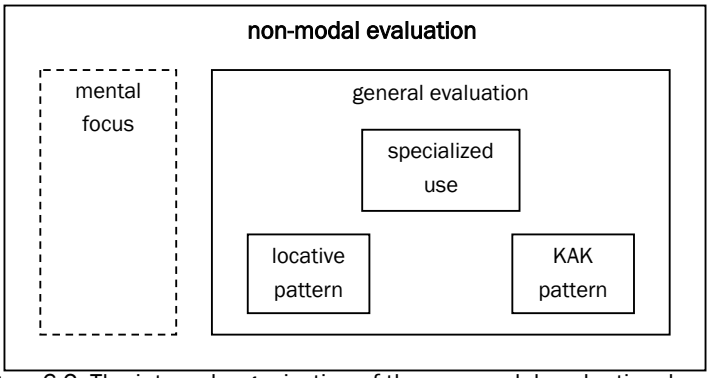

Figure 6.2: The internal organization of the non-modal evaluative domain

Finally, it should be noted that two subtypes of genuine non-modal evaluative meaning are attested with other adjectives in the COBUILD corpus, viz. the **locative and KAK pattern**. Interestingly, the adjectives found are generally held to express only

evaluative meaning, that is, unlike the adjectives studied here, they do not occur in both non-modal evaluative and deontic expressions.

(6.32) Instead, the great escape artist put a sand-wedge from 85 yards to within a foot of the pin, and another sand-wedge pulled up six feet from the hole on the last. The first putt was easy, the second he made look easy. Those two putts must have flushed away some of the negative thoughts that have been bedevilling him; at last, the flashing Ballesteros smile was back. “It's **nice** to be here for the weekend,” he said. One would think the sponsors were fairly happy about it as well. (CB, times)

(6.33) He was unemployed and homeless when he turned up at the Stockport Literacy Centre. Last June eight years down the line he completed an M A in International Politics and Relations at Aberdeen University. <ZZ1> script ends. recording starts <ZZ0> MX <ZF1> it's <ZF0> it's **great** to see you here today at this ceremony. You've actually been nominated for a regional award so you're a regional finalist. (CB, ukspok)

(6.34) MOM: Ooh, thanks, Al! Ooh, but those leather trousers are a might whiffy, let me throw them in the machine for my little boy. <p> AL: But mom <p> MOM: No but. We bought you up to believe that cleanliness is next to Godliness. <p> Al gazes longingly at his mother's collection of meat skewers) <p> MOM: Ooh, it's **nice** to see you. I've been wanting your advice on how to decorate the house. I had thought of stripped pine for the kitchen, but it's a bit expensive, so maybe we'll settle for a natural wood finish. (CB, ukmags)

(6.35) They talked of Marcica. Anna spoke of her with affection. Frido loves her, you know. He disappeared, like so many, somewhere in Russia. But Frido has always loved her." It's caused us all -- my parents -- awful pain, her being here. I can't get used to the idea of Marcia, spending the war -- well “On the other side? And courted by German officers? Your little sister? Is that what you mean?” “I suppose that it is.” But it was both **wonderful** and **poignant** to hear that Marcia was well. (CB, ukbooks)

(6.36) <F03> Now two years ago we have about twelve footpaths in our village and two years ago we could walk four without any obstructions. <M01> Mm. <F03> And since we've had this new Footpath Act last year it's **nice** to know and see that the farmers oh are cooperating a little bit. <M01> Excellent. (CB, ukspok)

(6.37) And the big story is still the situation in Iraq and particularly the situation facing the Kurds as they <tc text=pause> flee into the mountains away from Saddam Hussein's armies. Erm and Turkey has closed its borders. Er they're in the cold they're in the snow they're without food they're without shelter. And things are pretty bad really for the Kurds at the moment. And er it's **interesting** to see Mrs Thatcher's been weighing in on their behalf. <tc text=pause> Er and er if you want to talk about that or anything else you're more than welcome. (CB, ukspok)

(6.38) “Everybody loves him round here and they don't want me to upstage him. Let's just say I'll creep up as close as I can.” Tony was present to see the action and said: “It's **great** to see Michael carrying on where I left off. The race had a few problems but, at the same time, the racing was excellent and it's a unique track and occasion.” (CB, sunnow)

(6.39) Benn has always said that 1996 would be his last year, and he would like to go out with the final tear-up" with Jones. It was not **surprising** to see Benn wanting to retire after a hard campaign over nine years and after being comprehensively outpointed by an ageing opponent Malinga is 36 who is himself contemplating retirement. (CB, times)

Examples (6.32) to (6.34) with *nice* and *great* instantiate the locative pattern. These examples 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 expressions have become semi-formulaic phrases typically used in face-to-face communication. The examples given here 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 chapter 1, section 1.3.4). We might thus be led to conclude that in the locative pattern *good* has come to express likeability rather than moral evaluation, and hence, 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 is not predictable from the component parts. The locative construction can be visualized as in Figure 6.3.

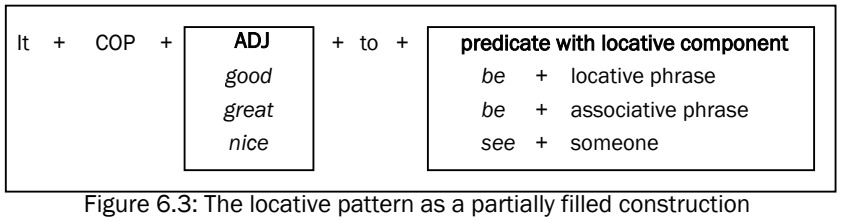

Figure 6.3: The locative pattern as a partially filled construction

Examples (6.35) to (6.39) above illustrate the KAK pattern with the adjectives *wonderful*, *poignant*, *nice*, *interesting*, *great* and *surprising*. The KAK predicates include *hear*, *know* and *see*, and the secondary propositional complements take the form of a *that*-clause in (6.35) to (6.37), and that of a participial clause in (6.38) and (6.39). It is clear from the examples that the types of evaluative meaning expressed by KAK constructions include not only likeability but also expectability and significance. This finding explains, for instance, why *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, all examples above offer further evidence for 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).

2 Bridging contexts

This section is concerned with bridging contexts between non-modal evaluative and deontic meaning. Bridging contexts can be defined as contexts which support two different readings (Evans and Wilkins 2000: 550), in this case both a non-modal evaluative and a deontic interpretation (see chapter 5, section 2.2.2.1). I have shown above 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. They were thus invoked to account for the development of constructions with weak adjectives from deontic to non-modal evaluative constructions (chapter 5, section 2.4.2). 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 (6.40) and (6.41). A bridging *that*-clause can also have a present indicative finite, as in (6.42).

(6.40) "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." It was a wonderfully skilled reply, and "not overdoing the restriction on that" became one of my favourite euphemisms. (CB, ukbooks)

(6.41) A HIGH COURT judge urged Michael Howard yesterday to explain to Mohamed Al Fayed, chairman of Harrods, and his brother Ali why he had rejected their applications for British citizenship. Mr Justice Judge turned down the Egyptian-born brothers' application for a judicial review but questioned whether it was "**appropriate**" that the Home Secretary should have such wide-ranging powers of discretion. Although Mr Howard had acted lawfully when he rejected their request for naturalisation a year ago, his decision "lacked the appearance of fairness." (CB, times)

(6.42) 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. Current research includes ovarian cancer, early menopause, sperm behaviour and premature labour. We are well known for our glitzy fund-raising events, but I would like to see us having a more educational role-for instance, publishing our research findings to let people know what's available she says. 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 (6.40), 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. In (6.41), the speaker, a high court judge, questions whether it is appropriate that the Home Secretary should have such wide-ranging powers as to decide on requests for naturalization. The context suggests that he certainly has these powers at the moment of speech, which enables a non-modal evaluative reading with attitudinal *should*. However, the judge's remark can also be interpreted as a question whether it is desirable that the Home Secretary should (continue to) have such wide-ranging powers. In this sense, the expression has deontic meaning. In (6.42), finally, 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. Like in (6.40) and (6.41), 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 finites 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, which is very similar to the hypothetical constructions discussed in chapter 5, section 2.4.2 (examples (5.76) and (5.77)). The construction in (6.43) below, for example, can be understood as evaluating the hypothetical anterior SoA referred to in the *to*-clause, viz. having hired the Whitehall Theatre. However, the expression also has an element of potentiality to it. In fact, 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.

(6.43) 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)

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. In (6.44) below, for instance, 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 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 rather than a non-modal evaluative meaning.

(6.44) 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. You very soon find out that you either definitely wear the jeans that are in this week or say the things that are in this week or else. 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. That's how The Sugarcubes got attracted to each other. We are extreme people: we love eating chocolate and we love getting really drunk and we were the kind of people who liked running on roof and driving cars onstage and doing little scandals to shock the nation." (CB, ukmags)

(6.45) 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)

The third type of bridging expression is illustrated in (6.45) above. This example contains a *for…to*-infinitive construction, with the *for*-NP expressing the understood subject of the *to*-infinitive. 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 (6.45), 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 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 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, viz. (6.46) below.

(6.46) 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. Waltham Forest Black History Month. (CB, ukmags)

It can be noted that in (6.46) the strong adjective *vital* is coordinated with *refreching*. 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 study 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 6.19 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 6.20 presents the formal properties of the matrix and *that*-clause finites. As indicated above, *that*-clauses have only *should* or present indicative forms.

Adjective	Number of occurrences in the sample	Number of bridging contexts			% of bridging contexts relative to sample
		that	*to*	total	
appropriate	133	6	2	8	6.02
fitting	37	1	0	1	2.70
good	200	1	2	3	1.50
important	200	1	0	1	0.50
proper	25	2	2	4	16.00
(vital)	(200)	(1)	0	(1)	0.50
total	595	11	6	17	2.86
	(795)	(12)	(6)	(18)	(2.26)

Table 6.19: The adjectives occurring in bridging contexts

Type of finite	Fr	Indicative forms		Modalized form	
		pres	past	*should*	*might*
matrix (18)	n	14	3	0	1
	%	77.78	16.67	0.00	5.56
that-clause (12)	n	2	0	10	0
	%	16.67	0.00	83.33	0.00

Table 6.20: The formal properties of matrix and *that*-clause finites of bridging contexts

3 Deontic and dynamic modality

This section deals with the two modal types of qualificational categories in the conceptual map, viz. deontic and dynamic meaning. The fact that these categories are treated in the same section is significant: it will be argued that the distinction between deontic and dynamic meaning is not as clear-cut as put forward in the literature (e.g. 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 proposed in chapter 3. Before concentrating on this line of argument (presented in section 3.2), I will first take a look at both weak and strong adjectives expressing deontic meaning (section 3.1). In particular, 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), as has been observed for other linguistic phenomena, such as interclausal relations (e.g., Davies 1979: 146–176; Sweetser 1990: 76–112; Verstraete 2007: ch. 9). Finally, in section 3.3 I will focus on the SoA-related uses of deontic expressions with weak adjectives. In general the three subsections confirm that the conceptual hierarchies of weak and strong adjectives presented in chapter 5, section 3 also hold in Present-day English.

3.1 SoA-related and speaker-related deontic uses

In the sample, the majority of deontic examples – with weak or strong adjectives – express the desirability for someone to carry out a particular SoA in the real world, as in, for instance, (6.47) below. However, there are also a number of instances which are not so much oriented towards the extralinguistic world, but which are rather used to structure a stretch of discourse, as in (6.48) 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).

(6.47) TONY Blair's Drug Czar Keith Hellawell admitted last night it would be 'pie in the sky' for him to pledge the creation of a totally drug-free Britain. But he insisted it was **vital** to warn kids of the perils they face. 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)

(6.48) 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)

In (6.47) the SoAs that are assessed as desirable clearly relate to the real world: warning children about the dangers of drugs before they are exposed to drug dealers is something that can only be carried out in the extra-linguistic world. In (6.48), by contrast, the SoA assessed as desirable relates to text structure and the deontic expression as a whole serves the speaker's argumentative goals. More precisely, it is used to indicate that the speaker has finished the body of the text and now proceeds to the conclusion. The speaker also specifies what the conclusion will look like, viz. a closer clarification of the vernacular issue in Christian missionary translation, in two stages. These examples thus illustrate that expressions of desirability can function on **two levels**, viz. an SoA-related and speaker-related level.

It is interesting to note that deontic expressions are not the only type of linguistic expression that can function on two different levels. In fact, the same has been observed for **interclausal relations** (e.g., Davies 1979: 146–176; Sweetser 1990: 76–112; Verstraete 2007: ch. 9). Consider the following examples.

(6.49) "Was that why you returned to Salzburg after the war? In the hope that Elke Knödel would come back, too?" "I came back <u>because this is my home</u>. 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))

(6.50) 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 <u>because I saw it bounce twice and there was nowhere for it to get lost</u>," Torrance said. (CB today) (cited in Verstraete 2007: 237 (13))

(6.51) Tell me first of all the history of marmalade. Now where does the name come from? <u>Because I've heard stories and I don't know if they're true</u>. (CB ukspok) (cited in Verstraete 2007: 237 (14))

In his discussion of the examples above, Verstraete points out that the structures "are distinct in terms of the aspect of the main clause to which the secondary clause [underlined in the examples, AVL] is related" (2007: 227). In (6.49), 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 (6.50) and (6.51), however, the *because*-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. More specifically, in (6.50) 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). In (6.51), 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 (6.50)) and a speech act subtype (as in (6.51)) (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. The remainder of this section will focus on the speaker-related use of deontic expressions.

A closer study of the speaker-related deontic expressions shows that it is useful to distinguish between two types, viz. a text-building and a mental focus type. The first type is monologic in nature and pertains to a text as a speaker's artefact (section 3.1.1). The second type is more dialogic in nature: it involves the speaker urging the hearer to focus mentally on a particular propositional content (section 3.1.2). It will be argued that this second type can be conceived of as a partially filled construction, similar to the KAK pattern discussed above (section 1.2.4).

3.1.1 Text-building use

As mentioned above, speakers can use deontic expressions in construing texts, for example to indicate its structure or to build a certain argument. The deontic constructions used for these purposes have rather **diverse formal properties**. Most notably, text-building examples can be construed with *that*-clauses or *to*-clauses. Within the group of *to*-infinitive constructions, the infinitival subjects have either specific reference, as in (6.48) above and (6.52) below, or arbitrary reference, as in (6.53). In the sample, the examples with weak adjectives all involve specific reference, whereas the examples with strong adjectives can be of either type. In (6.52) below, the speaker is listing and discussing the characteristics of world systems theory and he uses the deontic expression to indicate that he will go on to the fourth characteristic, viz. unequal exchange. The context makes it clear that it is the speaker him/herself who is going to focus on that topic, and the deontic expression as a whole justifies the following stretch of discourse, which in fact deals with the fourth characteristic.

(6.52) So far, I have attempted to show that world systems theorists differ in their approaches to the historical foundations of the world economy and that they tend to polarize the societies that make up this system, often with the addition of an intermediate category. In their different ways, too, they tend to treat social and economic structures of the Third World as, at root, derivative from the operation of the world market. There is also considerable consensus among them on the mechanism through which international inequalities are maintained. As the fourth characteristic of world systems theory, then, it is **necessary** to focus on unequal exchange, a topic which, for Marxist economists, involves highly complex issues. It is clear that Amin, Frank and Wallerstein were strongly influenced by the debate on equal exchange, especially by the work of Emmanuel (1972). (CB, ukbooks)

(6.53) 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 £ 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)

Unlike in (6.52), the understood subject of the *to*-infinitive in (6.53) is not coreferential with the speaker, but it has arbitrary reference. 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. Again, the speaker uses the deontic expression to move on with his/her text: it justifies why the following discourse focuses on the history of Japanese coins. Thus, text-building examples serve to bring across the speaker's opinion and strengthen his/her arguments, or to indicate or motivate the structure of the discourse.

In addition, the examples also show that this type does not correlate with a clear constructional pattern. Yet, all matrices are copular constructions, typically with a present indicative finite or tentative *would*, locating the assessment in the here-and-now of the speaker's text-building activity. Table 6.21 below presents the adjectives found in text-building expressions and it indicates the frequency of the formal types of complement. Table 6.22 summarizes the findings of the matrix and *that*-clause complement finites.

Adjective	Number of occurrences in the sample	Number of deontic uses	Number of text-building uses			% of text-building uses	
			that	*to*	total	relative to sample	relative to deontic uses
appropriate	133	90	1	7	8	6.02	8.89
convenient	33	32	0	1	1	3.03	3.13
good	200	74	0	1	1	0.50	1.35
important	200	193	0	1	1	0.50	0.52
proper	25	18	0	1	1	4.00	5.56
essential	200	172	0	1	1	0.50	0.58
necessary	200	154	1	18	19	9.50	12.34
total	991	733	2	30	32	3.23	4.37

Table 6.21: The adjectives occurring in the text-building use

Type of finite	Fr	Indicative forms		Modalized forms		
		pres	past	pres subj	*will*	*would*
matrix (32)	n	26	1	0	1	4
	%	81.25	3.13	0.00	3.13	12.50
that-clause (2)	n	1	0	1	0	0
	%	50.00	0.00	50.00	0.00	0.00

Table 6.22: The formal properties of matrix and *that*-clause finites of the text-building use

3.1.2 Combined pattern of mental focus on proposition

In contrast to the monologic text-building type of speaker-related deontic expressions, the more dialogic mental focus type has **specific formal properties**. First and foremost, it involves a combined pattern of complementation (see chapter 5, section 2.2.3). As the meaning of the construction as a whole cannot be compositionally derived, it qualifies as a construction in the Goldbergian sense. I will even argue that it constitutes a partially filled construction, similar to the KAK pattern discussed above (section 1.2.4). In terms of semantic-pragmatic value, this type is much akin to the non-modal evaluative mental focus type, discussed in section 1.1 above. In fact, as pointed out in chapter 5, section 2.4.1, it is the deontic mental focus pattern that can be seen as the predecessor of the non-modal evaluative mental focus type. It will become clear, for instance, that the matrices of the deontic type share many properties with those of the non-modal evaluative type. A few examples are given below.

(6.54) Jonathan Seamons of Hayues in Middlesex has been taking pictures for three months and his flower studies are reasonable. 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 on a steady tripod or shoot at faster than 1/250 sec. (CB, ukmags)

(6.55) The principle of World Cup rotation is accepted, but it remains to be decided when it is introduced and with which continent. It will save a lot of wasted expense on campaigns as by Japan and South Korea in the present bidding for 2002. Johansson has abandoned Vision I's proposal for a rotating presidency and has also stopped attempting to persuade Japan and South Korea to agree to a joint-hosting. "I'm not going to fight any more on their behalf," he said. [...] Johansson, mild of manner, is a reluctant revolutionary, a man who dislikes confrontation. He did not want to be a candidate to succeed Havelange and only consented last month. "I hate to be attacking Havelange," he said, "because he has done so much for so long, but when I am accused of 'fighting Fifa', it is **necessary** to remember that we, the confederations, are Fifa. We have ideas for development. Some people talk of revolution: we talk of evolution." (CB, times)

(6.56) In Dr Penelope Leach's presentation, she described the state of marriage as "very fragile and impoverished". I invited her to elaborate on that. I think it's impoverished and fragile because we're asking or expecting one man and one woman, fairly much in isolation from extended family, to be everything to each other - to be each other's friend, brother, lover, husband, father, supporter, companion - the lot. And I think it's quite **important** to realise that this isn't the way marriage and family have been in the West for very long, and not the way they are over most of the world. (CB, bbc)

(6.57) 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. This allows the psychiatric team to sort out the few who are intent on death (and perhaps remain committed to this option) and also to gather appropriate support for those who "cried for help" because they needed it. For many patients it is the first time someone has taken their feelings seriously; this may be especially true of adolescents, who have often had their feelings dismissed because of their age. Watching adolescent love it is **good** to remember that Romeo and Juliet were very young - it is all to [sic, AVL] 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.[7] Yet, much like the examples of the KAK pattern, the expressions above share a particular constructional make-up; all examples involve an affirmative present indicative copular finite (cf. the non-modal evaluative type, see section 1.1) and an extraposed *to*-infinitival subject that in turn comprises a cognition predicate and a secondary *that*-clause. Unlike in the KAK examples, however, the SoA referred to in the *to*-clause is potential, that is, it has not been actualized or is not being actualized at the moment of deontic assessment, nor is there any indication that it will certainly be actualized at some point in the future. A second difference relates to the

[7] Note that the constructions with non-importance adjectives such as *good* and *necessary* did not develop along the same lines as those with *essential* or *important* (as discussed in chapter 5, section 2.4): *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 (6.57) without the primary *to*-clause (viz. *it is good that Romeo and Juliet were very young*) has a general commentative meaning (cf. section 1.2.1), rather than a mental focus meaning (cf. section 1.1).

understood infinitival subject: unlike with the KAK *to*-clauses, the subjects of the cognition *to*-infinitives have **arbitrary reference**, arguably so as to include the hearer. Together, these formal and semantic properties give rise to the specific semantic-pragmatic meaning of the construction as a whole: the speaker encourages the hearer to consider the propositional content encoded by the secondary *that*-clause. This meaning is consistent with the properties mentioned above (e.g., the matrix finites locate the speaker's action of urging the hearer in the here-and-now of the speech situation, cf. section 1.1), 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).

Apart from the formal properties of the matrix finite, the preliminary discussion of the deontic combined construction in section 1.1 has also touched on some characteristics of the secondary *that*-clause. It was stated that the propositional *that*-clauses, as in (6.54) to (6.57), 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 (6.54) to (6.57) above are non-modalized statements. The *that*-clauses in the structures below, for instance, involve a deontic expression (6.58), a directive expression (6.59), and an epistemic expression (6.60). The modalized finites are underlined.

(6.58) 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 <u>should</u> be able to imagine the actions (such as your arm falling), like a rehearsal in your mind. (CB, ukbooks)

(6.59) 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 <u>must</u> be paid for and that babies in arms regretfully cannot be admitted to any part of the programme. (CB, ukephem)

(6.60) 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, <u>can</u> go down as well as up - so you might get back less than you invested. Foreign currency exchange rates can also cause the value of any underlying overseas investment to go up or down. (CB, ukephem)

Furthermore, it should be noted that many of the adjectives found with the deontic mental focus construction are also found in a very similar construction, which contains, however, a **verbalization predicate** instead of a cognition predicate. The examples below show that these expressions are less restricted in terms of matrix construction, and polarity and TAM marking of the matrix finite. In addition, they vary in the extent to which the construction as a whole can be interpreted as urging the hearer to focus mentally on the secondary *that*-clause.

(6.61) Drabble's new entry on Martin Amis in the Oxford Companion, for example, 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 (hence no Booker prize) 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)

(6.62) 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. "Criteria for the Ideal Case Bearing on Reincarnation", Indian Journal of Psychology 2 (1960), 149 - 155. (CB, ukbooks)

(6.63) Traditionally, the four seasons are marked by solar phenomena, and are therefore of astrological significance. These four time-markers are the Winter Solstice, the Spring Equinox, the Summer Solstice and the Autumn Equinox. These four events are of great significance in the ancient Calendar of Rites, and we shall be looking at some attendant phenomena later. It is **Important** to stress that the Chinese method of using these four time-markers to indicate the seasons is radically different from our own, as it is with all Chinese methods of time measurement. (CB, ukbooks)

Unlike in (6.54) to (6.60) above, the matrix *Parker sees fit* in (6.61) is a complex transitive construction. As a whole, the expression seems to draw 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 primarily to the secondary *that*-clause; it is Parker's action of informing us of some juicy details that is frowned upon by the speaker in the next sentence. Examples (6.62) and (6.63) both have copular matrix clauses. In (6.62), the use of the negative and modalized matrix finite (*it should not be*) actually downgrades the importance of the propositional content of the secondary *that*-clause; the speaker presumes that it is (or should be) known well enough that a perfect reincarnation case has not been found yet. The matrix in (6.63), finally, has all the characteristics of the matrix of the deontic mental focus type. It is thus not surprising that the semantics of the construction as a whole comes very close to that of the last type as well. What is still different is the referential properties of the infinitival subjects: the understood subject of the *to*-clause in (6.63) (and (6.61)–(6.62)) has specific reference (it is the speaker who should stress the propositional content of the *that*-clause), whereas the subjects in examples (6.54) to (6.60) above have arbitrary reference, so that the *to*-clauses can more readily be interpreted as appealing to the hearer. In general, therefore, it can 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. To conclude, Table 6.23 shows the adjectives found with cognition

and verbalization *to*-clauses complemented by secondary *that*-clauses, and Table 6.24 details the formal features of the matrix finites.

Adjective	Number of occurrences in the sample	Number of deontic uses	Number of mental focus uses			% of mental focus uses	
			that	*to*	total	relative to sample	relative to deontic uses
(i) cognition predicates							
good	200	74	0	1	1	0.50	1.35
important	200	193	0	19	19	9.50	9.84
essential	200	172	0	3	3	1.50	1.74
necessary	200	154	0	3	3	1.50	1.95
vital	200	184	0	2	2	1.00	1.09
total	1,000	777	0	28	28	2.80	3.60
(ii) verbalization predicates							
fit	49	49	0	1	1	2.04	2.04
important	200	193	0	3	3	1.50	1.55
crucial	53	48	0	1	1	1.89	2.08
essential	200	172	0	2	2	1.00	1.16
necessary	200	154	0	3	3	1.50	1.95
vital	200	184	0	1	1	0.50	0.54
total	902	800	0	11	11	1.22	1.38

Table 6.23: The adjectives occurring in the deontic mental focus type with cognition and verbalization predicates

Type of finite	Fr	Indicative forms			Modalized forms	
		pres	pres perf	past	*would*	*should*
(i) cognition predicates						
matrix (28)	n	27	0	0	1	0
	%	96.43	0.00	0.00	3.57	0.00
(ii) verbalization predicates						
matrix (11)	n	7	1	2	0	1
	%	63.64	9.09	18.18	0.00	9.09

Table 6.24: The formal properties of the matrix finites of the deontic mental focus type with cognition and verbalization predicates

It is clear from Table 6.23 that in the sample the deontic mental focus construction is most frequent with the adjective *important*. This finding is supported by the results of the **multiple distinctive collexeme analysis**, which is based on exhaustive samples of the *to*-clauses found with the adjectives studied here (see chapter 2, section 3). Table 6.25 presents 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 6.26 shows which process types are preferred or disliked.

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 6.25: 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: process types	Obs. Freq. in A	Obs. Freq. in B	Fisher Yates p-value	Bonferroni correction	Collexeme: process types	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 6.26: The process types attracted to and repelled by the *to*-infinitive slot of the extraposed *to*-infinitive construction with *important*

Both tables show that *important* prefers cognition verbs in its *to*-clausal complements. More specifically, the three most strongly attracted collexemes 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 (6.63)). (Note that the most strongly repelled items include those expected in the non-modal evaluative locative and KAK use.) In Tables 6.27 and 6.28 below, I present the ten most strongly attracted items of the four other adjectives found in the deontic mental focus construction (see Table 6.23 above).

good: distinctive for A (**attracted**)					*essential*: 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
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 6.27: The collexemes most strongly attracted to the *to*-infinitive slot of the extraposed *to*-infinitive construction with *good* and *essential*

necessary: distinctive for A (**attracted**)					*vital*: 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
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

Table 6.28: The collexemes most strongly attracted to the *to*-infinitive slot of the extraposed *to*-infinitive construction with *necessary* and *vital*

It is striking that not any of the ten most strongly attracted items of the four adjectives includes a cognition verb that can be used in the deontic mental focus construction. These tables thus bear witness to the low frequency of *good*, *essential*, *necessary* and *vital* in the mental focus construction. They also suggest that *important* is the **model adjective** of this construction, which is confirmed by the diachronic analysis proposed in chapter 5, section 2.4.1. All in all, the discussions above lead us to conclude that the deontic mental focus construction is a **partially filled construction** like the KAK construction (see section 1.2.4)

with a limited set of lexical items patterning in two of the six slots (in boxes), as shown in Figure 6.4.

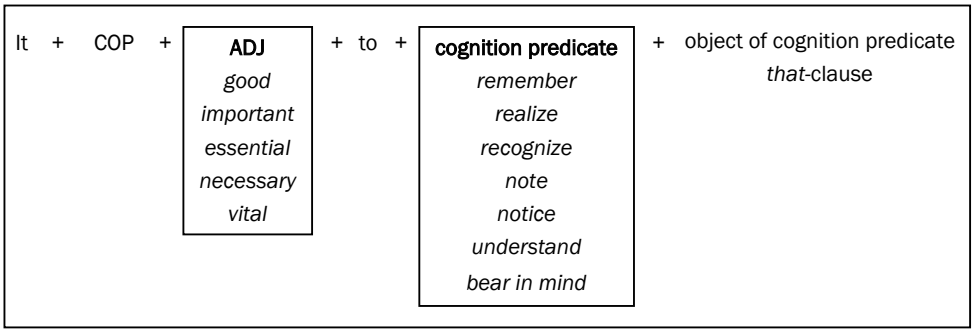

Figure 6.4: The deontic mental focus pattern as a partially filled construction

3.1.3 Conclusion

In this section, I have argued that deontic expressions with weak or strong adjectives can function at two levels: they can be used to express desirability of action in the outside world or they can be used to serve the speaker's argumentative purposes. Thus, I have drawn a distinction between SoA-related and speaker-related uses of deontic expressions, much in the same vein as put forward for interclausal relations (Davies 1979: 146–176; Sweetser 1990: 76–112; Verstraete 2007: ch. 9). 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 particular constructional features. The second type, by contrast, is a partially filled construction in the sense of Goldberg (1995). It is typically used to make the hearer focus mentally on the propositional content of the secondary *that*-clause. As in these two speaker-related types the speaker 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 problem of the delineation between dynamic and deontic modality will be dealt with in section 3.2 below.

3.2 Strong adjectives: the distinction between dynamic and deontic modality

The study of the complement relations established in dynamic and deontic constructions, presented in chapter 5, section 2.2.1, already showed that the two modal types of

construction in the conceptual map are very similar. In particluar, they differ only in one respect, viz. semantic integration.[8] Thus these findings suggested that the distinction between dynamic and deontic modality is not as clear-cut as represented in the literature, for example, by Nuyts (2005, 2006). In this section, I will argue that the issue of delineation 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 analysis presented here, especially the diachronic part. 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. Rather, 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 3 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 chapter 1, 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 (6.64) below, 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). This necessity is inherent in the parliamentary system of Great Britain (see also chapter 1, section 1.1.1, example (1.8)). Deontic expressions with strong adjectives, by contrast, involve the expression of someone's stance on the necessity of a particular SoA (see chapter 1, sections 1.1.2 and 2.2.2). Importantly, the attitudinal source commits him/herself to the SoA in terms of moral principles, which are external to the SoA. In (6.65), for instance, the speaker thinks it is morally necessary that unruly kids are taken in hand before they turn into yobs.

(6.64) 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)

(6.65) HOW on earth can Euro judges justify trying to ban parents smacking their children? Parents have to take responsibility for teaching their own 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)

[8] This difference only applies in one analyis, viz. if the matrices of deontic constructions are viewed as desiderative predicates rather than as modal predicates, which include the matrices of dynamic constructions.

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 put forward in chapter 3, 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 involves 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 (6.64) and (6.65) 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 (6.64), for example, can be interpreted as 'within the parliamentary system it is necessary that at least 100MPs 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 (6.66) below, 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 (6.67), the disjunct *in my view* (underlined) clearly identifies the speaker as the attitudinal source (cf. McGregor (1997: 232) on attributional modification).

(6.66) It seems that [Rhoidis, AVL] was blinded to the arguments against Joan, and to the flaws in his own case, by nothing more sinister than his overwhelming affection for her. 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)

(6.67) The most important point I tried to put across was that the biggest obstacle to our work, and indeed to any counter-subversion, was the total lack of cooperation, and indeed the obstructiveness, of the Security Service. The dissemination of intelligence on the home front had been discontinued in February 1974 by administrative, not political, decisions. […] 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, <u>in my view</u>, 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 properties 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. In fact, it is the **binary** nature of the dynamic category (see chapter 1, sections 1.1.1, 1.2.1 and 2.2.1) that 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 on the one hand, only strong adjectives and not weak ones are found to express situational necessity (see chapter 1, section 2.2.1). On the other, in dynamic expressions such as (6.68) below, 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 1.1 and 3.1.2).

(6.68) 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 (6.68) 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 analysis presented in chapter 3, 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 (6.64) 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 (6.69) below.

(6.69) 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 (6.70) below.

(6.70) 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. His argument has a condition-goal structure, but unlike in the case of (6.64) above, the relation of contingency does not reside in the situation, but rather in his 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.

(6.71) 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)

(6.72) 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)

(6.73) Ant [sic, AVL] injured animal will be shocked, frightened and in pain to some degree. Therefore most animals, especially dogs and cats, 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)

(6.74) 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)

In (6.71), 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. The expression in (6.72) does have a condition-goal structure. Here again world knowledge plays an important part: we know that lakes and mountains are elements of the landscape, and hence that the relation of contingency at issue most probably resides in the nature of the things talked about. Thus, I conclude that (6.72) expresses situational necessity as well. The expression in (6.73) 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 (6.72) above, the realization of the condition activity (viz. approaching the animal as calmly and reassuringly as possible) will not necessarily entail the realization of the goal activity (viz. 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 orther words, the speaker may want to give the hearer a piece of advice on helping injured animals. For such reasons, I regard (6.73) as expressing deontic meaning. The expression in (6.74), finally, has an SoA-internal element to it as well. In this case, the circumstances of the building site, viz. on a hill-side, causes the the builders to excavate into the hill-side before they can start building the house. However, 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. The examples 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 (6.74) 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. More specifically, situational necessity can originate 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 (6.71) and (6.72). In addition, situational necessity can originate in **self-imposed systems**, such as, for instance, the British parliamentary system in (6.64) above. Further examples are given in (6.75) and (6.76) respectively; example (6.77) deserves special attention.

(6.75) 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)

(6.76) Remember that views or children travelling alone must have their own passport and that newly-arrived infants must be included on their parents' passport in advance of their departure date. Also, in the event of any member of the party changing their name after booking, we or you 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)

(6.77) 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)

In (6.75), 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. In (6.76), 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 (6.75), as the first one is one imposed by policy makers, whereas the second is a natural one. Example (6.77), finally, 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. The context makes it clear that this necessity is a 'neo-fascist' interpretation of a historical fact that can never be justified. Perhaps, this example can be thought of as illustrating a speaker-related use of a dynamic expression by analogy with such uses of deontic expressions discussed in section 3.1 above.

By way of conclusion, I present the relevant categories (and subcategories) of dynamic and deontic modality in Table 6.29 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 hierarchy for strong adjectives proposed in chapter 5, section 3, except for the very infrequent adjective *indispensable*.

Adjective	Number of occurrences in the sample	SoA-related deontic uses			Dynamic uses			
					Circumstances		Self-imposed system	total
					Circum-stances	Presented as such		
		that	*to*	total	*that/to*	*that/to*	*that/to*	
critical	12	7	3	10	2	0	0	2
crucial	52	26	22	48	2	0	0	2
essential	200	82	85	167	15	1	12	28
indispensable	2	0	2	2	0	0	0	0
necessary	200	8	140	148	20	4	22	46
needful	21	10	10	20	1	0	0	1
vital	200	117	64	181	8	8	0	16
total	687	250	326	576	48	13	34	95

Table 6.29: The strong adjectives and their number of deontic and dynamic uses

3.3 SoA-related deontic expressions with weak adjectives

As discussed in the previous section, weak adjectives differ from strong ones in that they cannot occur in dynamic expressions. When combined with a mandative complement, they always express deontic meaning. In this section, 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.

(6.78) 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. You can apply for a time order as soon as you receive the default notice. (CB, ukbooks)

(6.79) So this morning I want to talk to you a little bit <tc text=clears throat> 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 er all the time people ask this sort of question. And and I don't really believe that we have all the answers for that. And oftentimes it's better to just go Well you know let God be God and shrug. But I do believe there are some common denominators that we've observed over the last year and over other visitations throughout <ZF1> his <ZF0> 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 expression in (6.78) 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, viz. 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, viz. the speaker. The instance in (6.79) does not have a condition-goal structure; it is uncluear for what purpose it would be good to reflect on the common denominators described, except that is worthwile 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, in the case of 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. With strong adjectives, this may be the case, which in fact enables them to express dynamic modality.

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 twice in the sample with a *that*-clause, the adjectives only pattern with *to*-clauses (cf. Table 6.30 below). Examples are given in (6.80) to (6.83).

(6.80) 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)

(6.81) As there cannot exist an absolutist Marxist doctrine that does not evoke another absolutist Marxist doctrine, C. Bettelheim took up arms for the former (and, incidentally, for the intelligence of exploiters) and 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)

(6.82) 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, covering ninteen-ninety, Amnesty says people are still being imprisoned for their political or religious beliefs in about half the countries of the world. And the report speaks of torture continuing in one-hundred countries. 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)

(6.83) 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 that they're just as responsible for the perpetuation of those violations and particularly if they're going to take that kind of double standard kind of approach where they won't say anything about their friends committing violations but they will say something about their enemies. (CB, bbc)

In (6.80), 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'. In (6.81), 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. In a similar vein, the SoA assessed as politically expedient and politically suitable (by some countries) in (6.82) and (6.83), viz. ignoring human rights abuses in other countries, is rejected by Amnesty International as morally 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 6.30 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 6.16, Table 6.30 confirms the conceptual hierarchy proposed for the weak adjectives in chapter 5, section 3. 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*.

Adjective	Number of occurrences in the sample	Number of deontic uses	Number of SoA-related deontic uses			% of deontic uses	
			that	*to*	tot	relative to sample	relative to deontic uses
appropriate	133	90	5	77	82	61.65	91.11
convenient	33	32	0	31	31	93.94	96.88
desirable	31	31	8	23	31	100.00	100.00
expedient	8	8	0	8	8	100.00	100.00
fit	49	49	0	48	48	97.96	97.96
fitting	37	5	0	5	5	13.51	100.00
good	200	74	3	69	72	36.00	97.30
important	200	193	60	110	170	85.00	88.08
profitable	7	7	0	7	7	100.00	100.00
proper	25	18	3	14	17	68.00	94.44
suitable	5	5	2	3	5	100.00	100.00
total	728	512	81	395	476	65.38	92.97

Table 6.30: The weak adjectives occurring in SoA-related deontic expressions

3.4 Conclusion

In this section, I have concentrated on the modal categories in the conceptual map, viz. 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 category of speaker-related expressions, the data allow us to distinguish between the monologic type of text-building uses and the more dialogic type of mental focus on a propositional content. This last type qualifies as a partially filled construction, like the KAK pattern discussed in section 1.2.4, 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 1.1.

Importantly, I have shown that within the group of SoA-related expressions with **strong adjectives**, it is sometimes hard to decide whether a particular construction expresses deontic or dynamic meaning. Thus, I have built on the conclusion of chapter 5 with regard to the complement relation established in dynamic and deontic constructions, and I have argued that the distinction between deontic and dynamic modality is not as hard and fast as presented in the literature (e.g., Nuyts 2005, 2006). 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 3. In particular, 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.

Finally, it was noted that constructions with **weak adjectives** do 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 6.31 below. For the weak adjectives, it has already been found that the **conceptual hierarchy** proposed in chapter 5, section 3 holds for Present-day English. Likewise, Table 6.31 shows that the conceptual hierarchy for the strong adjectives also applies in PDE, except for the very infrequent adjective *indispensable*. As suggested by Table 6.31, finally, the internal organization of the modal domain in the conceptual map can be visualized as in Figure 6.5 below.

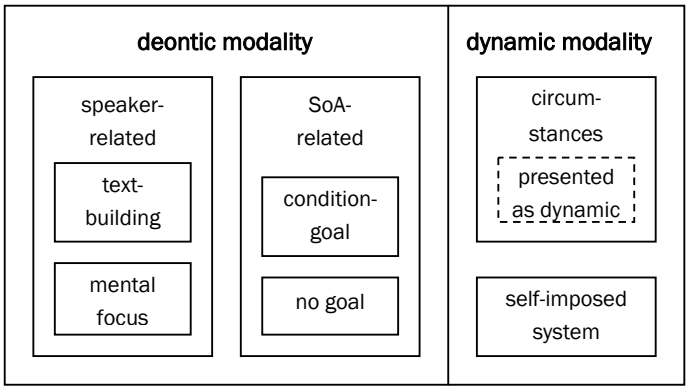

Figure 6.5: The internal organization of the modal domain

Adjective	deontic modality			dynamic modality		
	speaker-related		SoA-related	circumstances		self-imposed system
	text-building	mental focus		circumstances	presented as dynamic	
appropriate	+	-	+	-	-	-
convenient	+	-	+	-	-	-
desirable	-	-	+	-	-	-
expedient	-	-	+	-	-	-
fit	-	+	+	-	-	-
fitting	-	-	+	-	-	-
good	+	+	+	-	-	-
important	+	+	+	-	-	-
profitable	-	-	+	-	-	-
proper	+	-	+	-	-	-
suitable	-	-	+	-	-	-
critical	-	-	+	+	-	-
crucial	-	+	+	+	-	-
essential	+	+	+	+	+	+
indispensable	-	-	+	-	-	-
necessary	+	+	+	+	+	+
needful	-	-	+	+	-	-
vital	-	+	+	+	-	+

Table 6.31: The types of deontic and dynamic meaning and the adjectives expressing them

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, viz. ***would***. As pointed out in chapter 2, section 1 above, 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 finites, in which case they express non-modal evaluative meaning. What is special about *would* in such expressions 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.

(6.84) 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)

(6.85) 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 (6.84) is an example of the KAK pattern discussed in section 1.2.4 above. The speaker expresses his contentment at the defeat of the McLaren team after their four-year hegemony. The expression in (6.85) has the same constructional make-up as (6.84), except that it has *would be* as matrix verb phrase, whereas (6.84) 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).[9] Since such a hypothetical SoA has an undetermined factuality status rather than a determined one, I have analysed constructions like (6.85) as expressing deontic rather than non-modal evaluative meaning. In the data, contrastive pairs like (6.84)–(6.85) invariably have a present indicative form and *would* as matrix finites.[10] 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 finites) in present contexts.

4 Directive meaning

Directive meaning is different from the categories discussed above in that it expresses an **illocutionary** type of meaning, relating to the communicative 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 study. Yet, these constructions can be intended or interpreted to

[9] Karttunen (1971: 62) argues that expressions such as (6.85) represent an underlying subjunctive conditional, whose antecedent clause is nominalized, in this case into a *to*-clause.

[10] In the multiple distinctive collexeme analysis reported on above, the *to*-infinitives were included regardless of the type of their matrix finite 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 (6.85), and three cases of a locative pattern with *would*. These frequencies are too low, however, to reject the evidence from the collostructional analysis for the two non-modal evaluative partially filled constructions with *good*.

express directive meaning, that is, directive interpretation may arise as an implicature (see chapter 1, section 2.2.2). In this section, however, I will concentrate on adjectives that encode directive meaning, viz. weak *advisable*, and strong *compulsory*, *mandatory* and *obligatory*, which report on the existence of a recommendation or obligation.[11] I will show that directive adjectives can also be used in speaker-related text-building constructions, just like the adjectives found in deontic constructions (henceforth 'deontic adjectives' in this section). 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. It will become clear that the two types of expression differ most considerably in this last repect.

Analysis of directive constructions shows that the distinction between **speaker-related** and **SoA-related** expressions holds for directive adjectives as well. In the sample, speaker-related uses are very infrequent; the instances include only one expression with weak *advisable* (cf. (6.87)). Internet searches yield more examples, such as, for instance, (6.88) with strong *obligatory*.

(6.86) An Autotest is a timed event round a coned-off route in a field or car park. It's more a test of accuracy and dexterity than speed, but those are key elements in rallying. It can be done perfectly well in a road car, although if you take part in a lot of such events it's **advisable** to get the suspension strengthened. (CB, times)

(6.87) 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. Baran, who respected the Marxist/Leninist historically restricted definition of imperialism, recurred to the idea of dependency for his long-view interpretation of the historical effects of capitalism on non-Western nations. (CB, ukbooks)

(6.88) In reconciliation with past tracer permeability experiments and current understanding of pathogenesis of proteinuria from knockout and knockin mice, it seems **obligatory** to conclude that the integrated functions of all strata of the glomerular capillary wall are essential to maintain its permeability characteristics. With the disruption of any component, either of slit diaphragm or GBM, one would anticipate a compromise in the barrier functions of the capillary wall. (http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1941605, accessed on 28 dec 2008)

The directive expression in (6.86) illustrates the SoA-related use of *advisable*: getting the suspension of a car strengthened for rallying clearly relates to the outside world. The

[11] These adjectives are thus restricted to descriptive directive expressions in contrast to, for

expression in (6.87), by contrast, is used to serve the speakers' argumentative goals in building a text. It indicates that the speakers will first formulate a more precise definition of the concept and the theoretical contents of dependency before they move on to their survey of neo-Marxist thought on underdevelopment. Thus, the directive expression motivates why the following stretch of discourse lists views on exactly the concept and theoretical contents of dependency. The directive expression in (6.88) is found in the final section of a paper on renal glomerular capillaries, and it is used by the speakers to indicate that the description of the research in the main body of the text has come to an end. At the same time, the expression points to the major conclusion of what has been described in the previous discourse, and, like in (6.87), it justifies 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, viz. an SoA-related and speaker-related level (however, this last type of uses only includes text-building uses, not the mental focus on proposition use).

Directive adjectives are not only very similar to deontic ones with regard to the distinction between SoA-related and speaker-related uses, they also manifest the same types of **matrix constructions** (cf. chapter 4, section 1.2). In particular, the following examples show that directive adjectives occur in complex transitive constructions with causative verbs, such as *make* in (6.89) and (6.91), as well as with cognition verbs, such as *consider* in (6.90), and *think* in (6.92). (Note that some examples are taken from the Internet because of the low frequency of complex transitive constructions in the sample.)

(6.89) Voulkos advocated working large, the bigger the better, and metalcasting made it possible to spread out and engage considerable space. Local examples of his work from this middle period of his career are situated at the entrance to the Oakland Museum of California, in the garden of the Berkeley Art Museum, and outside the main police station in San Francisco. Ill health made it **advisable** for him to retire from teaching in 1985. Working full-time in his own building, he returned to clay as his principal medium. (http://www.universityofcalifornia.edu/senate/inmemoriam/PeterVoulkos.htm, accessed on 28 Nov 2008)

(6.90) [A]mong the documents is a top-secret letter, written on March 13 1970, by the then head of the KGB, Yuri Andropov, to Communist leader Leonid Brezhnev. It says: "In February 1946 the corpses of Hitler, Eva Braun, Goebbels his wife and children were buried in Magdeburg on the territory of the military complex now occupied by the Special Department of the KGB attached to the 3rd Army of the Soviet Forces in Germany. This military area is now being handed over to the German authorities by the army command in the interests of our troops and for military reasons. In view of the possibility of building work on this land, which could lead to the discovery of the graves, I consider it **advisable** to remove the corpses and destroy them by burning. […]" (CB, today)

example, imperative forms, which can only be used performatively (cf. Nuyts et al. 2005).

(6.91) TODAY revealed earlier this month that as many as 50 cats are believed to have died from the illness. Last night in the Commons, Food Minister Nicholas Soames said new laws were being drawn up making it **compulsory** for vets to notify the Government of any cases in domestic animals. He said eight cats had died from the illness - which creates holes in the brain - during 1993. There were 14 cases in 1992. (CB, today)

(6.92) Redpath is 40, tall, slim, quietly self–deprecating in a public schoolboy way, an expert sailor, and another of those chief executives who seem to think it **obligatory** to excel at gruesomely difficult feats of endurance (he has run squillions of marathons). (http://www.telegraph.co.uk/finance/2916838/Redpaths-road-to-riches.html, accessed on 28 Nov 2008)

If not in constructional patterns, the most important difference between deontic and directive constructions lies in the **types of SoAs** referred to in their complements. It is striking that directive expressions typically involve fairly practical actions, which may require some know-how but whose actualization can be verified more or less objectively, as in (6.86) and (6.89) to (6.92). Deontic expressions, by contrast, sometimes involve fairly abstract actions, which may be hard to put into practice and to verify. I repeat here example (6.69) from section 3.2 above.

(6.93) 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 seem to confirm the tendency of directive adjectives to combine with practical actions. In Tables 6.32 and 6.33, 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*-clauses found with directive adjectives denote concrete actions, such as booking, wearing, telephoning, notifying, flying, buying, kissing, and driving.[12] Of course, such *to*-clauses may also occur in deontic expressions, but the main difference here is that they are typical of directive constructions, while deontic expressions may also involve more abstract actions.

[12] In the case of *mandatory*, the *to*-clauses also refer to concrete actions, viz. disclosing the sources of all West German intelligence, accepting a certain financial arrangement when you retire, and wearing hats and gloves.

advisable: distinctive for A (**attracted**)					*compulsory*: 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 6.32: The collexemes most strongly attracted to the *to*-infinitive slot of the extraposed *to*-infinitive construction with *advisable* and *compulsory*

mandatory: distinctive for A (**attracted**)					*obligatory*: 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

Table 6.33: The collexemes most strongly attracted to the *to*-infinitive slot of the extraposed *to*-infinitive construction with *mandatory* and *obligatory*

In summary, directive expressions differ from deontic ones in semantic rather than formal terms. Most notably, they report on the existence of a recommendation or obligation to carry out a particular practical action, whereas deontic constructions express the desirability to carry out an action that may be either practical or fairly abstract and complex. This focus on practicality also meshes with the fact that directive adjectives are found in speaker-related text-building uses (at least *advisable*), but not in the mental focus on proposition construction. In any case, the distinction between speaker-related and SoA-

related expressions is what determines the internal organization of the directive domain, as presented in Figure 6.6. To conclude, Table 6.34 details the frequency of the directive adjectives in the sample and it shows an overall predominance of *to*-clauses.

Adjective	Number of occurrences in the sample	Number of speaker-related directive uses			Number of SoA-related directive uses		
		that	*to*	total	*that*	*to*	total
advisable	70	0	1	1	4	65	69
compulsory	17	0	0	0	2	15	17
mandatory	3	0	0	0	0	3	3
obligatory	9	0	0	0	0	9	9
total	99	0	1	1	6	92	98

Table 6.34: The adjectives occurring in speaker-related and SoA-related directive uses

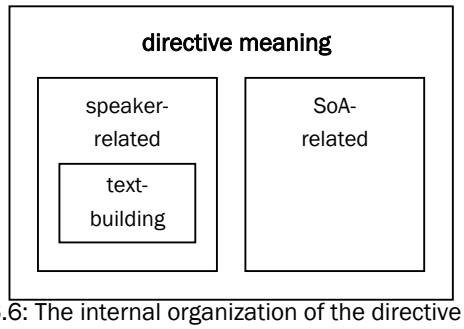

Figure 6.6: The internal organization of the directive domain

5 Conclusion

In this final chapter, I have focused on Present-day English constructions with dynamic, deontic, evaluative and directive adjectives, in order to refine the conceptual categories included in the conceptual map. On the basis of two types of analysis, I have proposed various subcategories within the four major categories of non-modal evaluative, deontic, dynamic and directive meaning. In addition to these conceptual refinements, I have also elaborated on the delineation between deontic and dynamic modality, and I have argued that it is not as clear-cut as presented in the literature.

The discussions above have shown that within the qualificational domain the adjectives studied can express a variety of meanings and they can occur in a number of partially filled constructions, such as the non-modal evaluative locative and KAK constructions, and the deontic mental focus construction. The illocutionary domain proved to be less diverse, with only the distinction between speaker-related and SoA-related use at work. The figures representing the **internal organization** of the various domains above

have been integrated in Figure 6.7 so as to summarize the main findings of this chapter. In Figure 6.8, I have added the adjectives studied (in roman type) and directive adjectives (in italic type) to the refined conceptual map. 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 deontic subcategory does not distinguish between condition-goal structures and structures without an expression of goal.) In general, Figure 6.8 shows that the distribution of the adjectives studied 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 chapter 5, sections 2.4.1 and 2.5 that the use of strong *essential* and *crucial* in the non-modal evaluative mental focus pattern should not be regarded as a counterexample to this overall tendency because of its specific semantic-pragmatic value. Finally, Figure 6.8 also indicates that the **conceptual hierarchies** for weak and strong adjectives presented in chapter 5, section 3 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 an insight into the distinction between **deontic** and **dynamic modality**. Whereas in chapters 4 and 5 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 3) 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 extraposition 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 possibility 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 (s)he 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 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 2 above). 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. section 3.2, chapter 1, section 1.2.1), 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 3.2). The twofold second parameter has been included in the conceptual map in Figure 6.7. All in all, like chapters 4 and 5, this final 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.

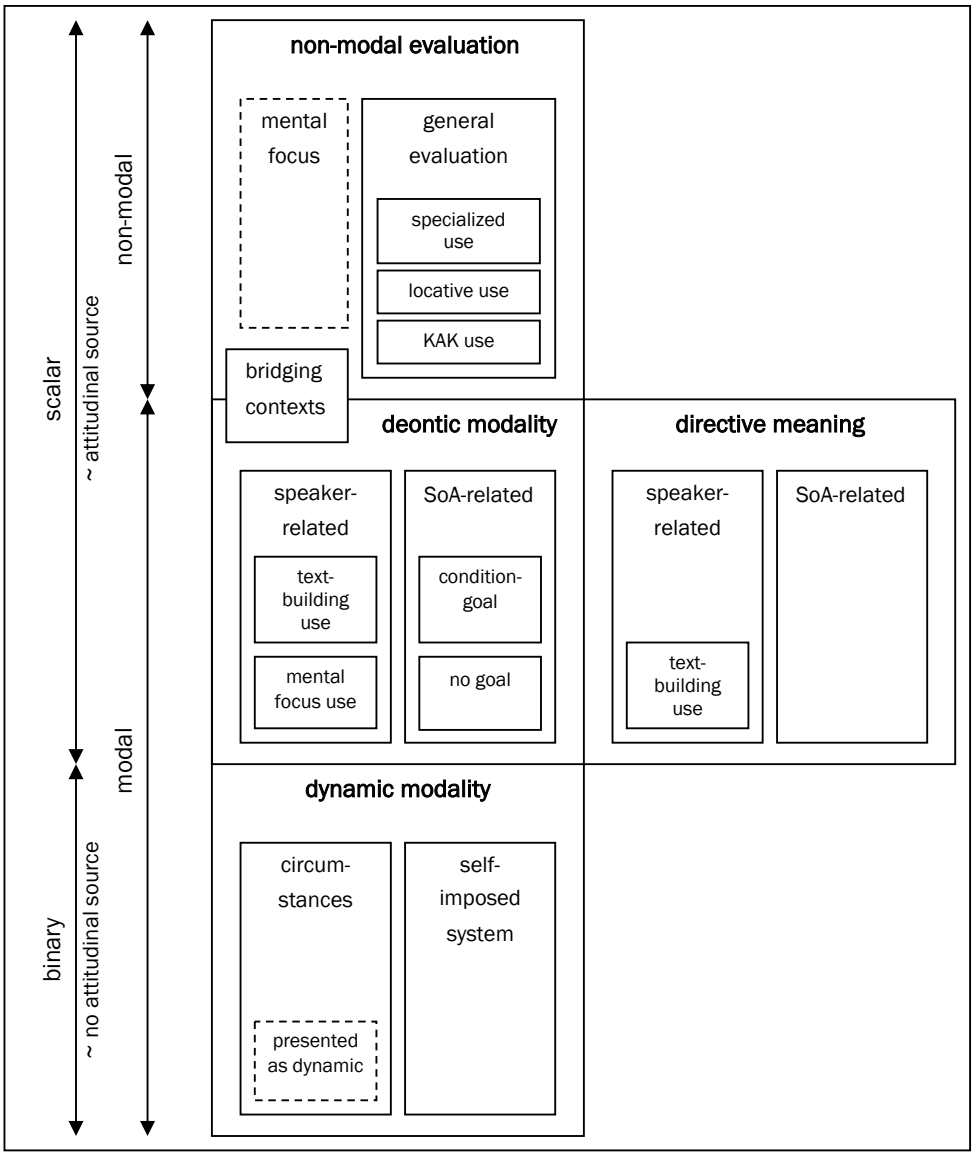

Figure 6.7: The refinements of the conceptual map

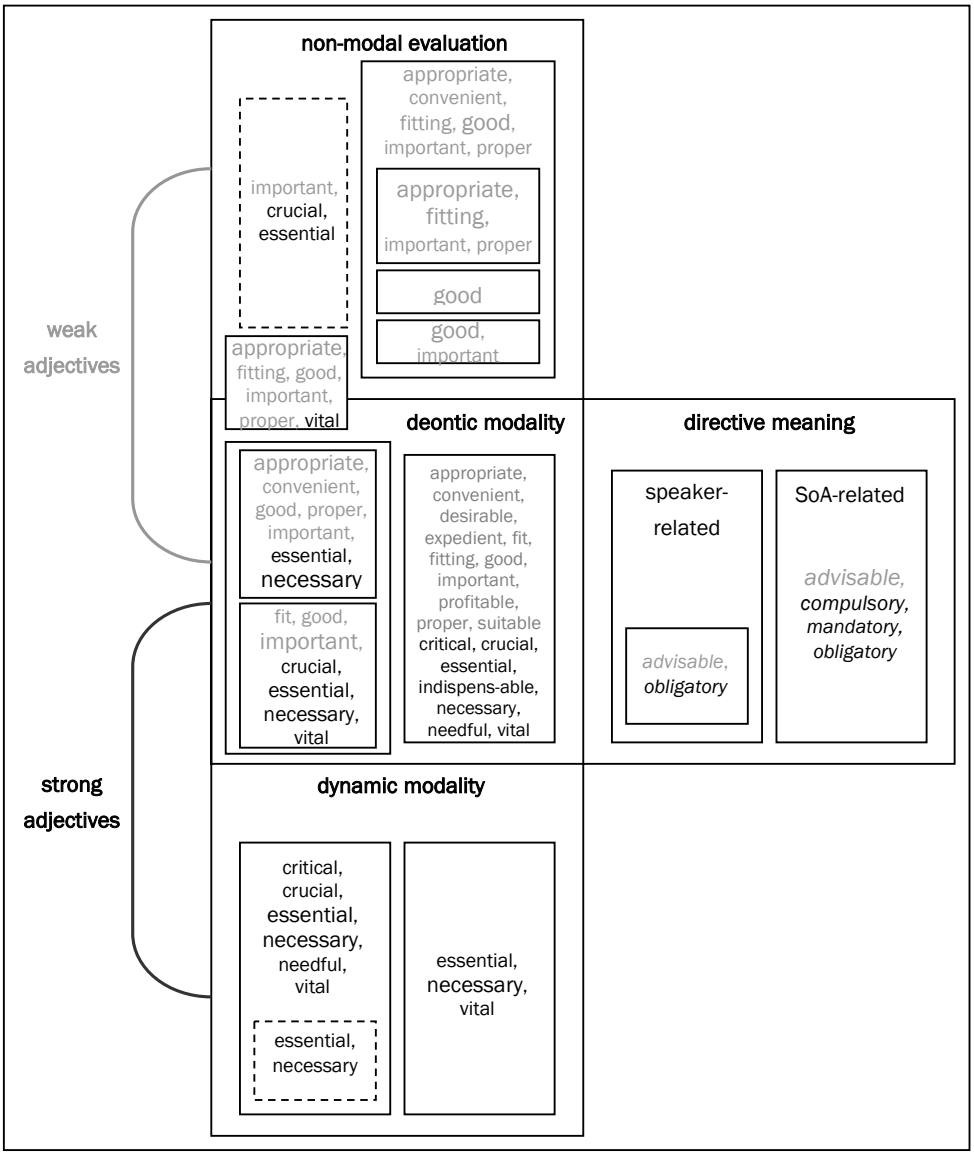

Figure 6.8: The adjectives in the refined conceptual map

Conclusion

In this study, I have explored and mapped some partly uncharted areas in the domains of modal-evaluative meaning and complementation. The starting point was the study of extraposition constructions with adjectival matrices that express deontic meaning, i.e. which assess the degree of desirability of particular States of Affairs (SoAs). On the basis of these data, it was found that the same set of adjectives can also occur in conceptually related constructions, viz. situational dynamic and non-modal evaluative constructions. Moreover, the distribution of the adjectives across these three types of meaning appeared to be determined by their membership in either one of two semantically coherent lexical classes, viz. 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 study and is repeated below in Figure 1.

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 1) 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 that constructions with strong adjectives cannot express non-modal evaluative meaning.

These findings justify a number of **claims** – defended in this study – about the partitioning of the modal-evaluative domain. First, 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 chapter 1, sections 1.1.1 and 2.2.1). Dynamic expressions with strong adjectives indicate the necessity of a particular SoA that 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 chapter 1, section 2.2.2). While the two previous claims relate to the vertical axis of the map, the final claim 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, viz. conceptualization versus interaction (cf. Nuyts et al. 2005, see chapter 1, 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 study such as *proper* and *essential* are restricted to

qualificational expressions (viz. the left area in the map), whereas adjectives such as *obligatory* (in grey font) can only be used in directive expressions (viz. the right area in the map). More generally, therefore, in this study I proposed a redefinition of deontic modality which excludes directive notions like obligation and permission, as well as attitudinal assessments of presupposed SoAs (e.g. Nuyts et al. 2005).

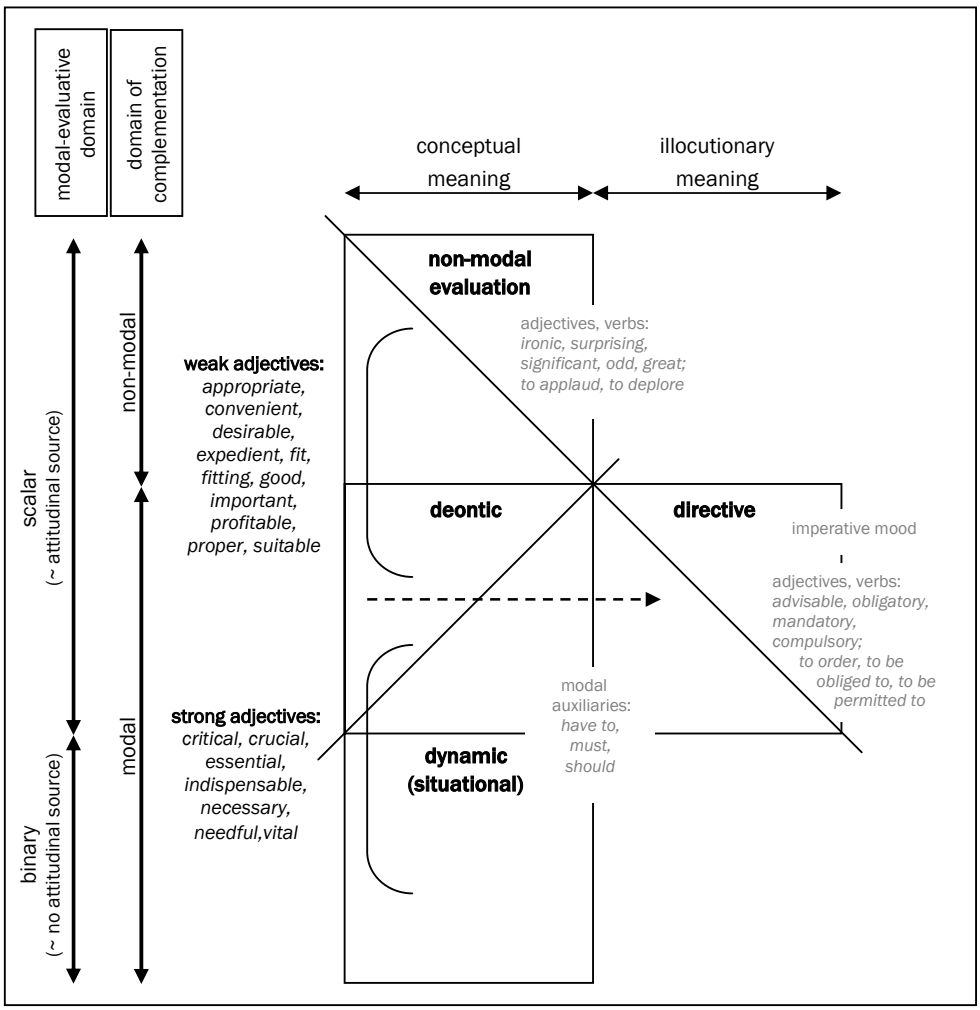

Figure 1: The conceptual map

In order to make the relations between the conceptual categories in the map more explicit, I proposed two **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 presupposed to be 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, viz. 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 chapter 1, sections 1.2.1 and 2.3.1). 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 three major types of 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 **diachronic validity** of the conceptual map. First, a number of case-studies revealed the diachronic relations between the conceptual categories included in the conceptual map. In chapter 3, studies of the strong adjectives *essential*, *vital*, *crucial* and *critical* indicated that they enter the conceptual map from below: they first develop situational dynamic meaning. In a later stage, they develop 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 pre-modal stages offered insights into how the lexical items develop 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, viz. 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* can even develop 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 a defining a diachronic pathway.

This finding was confirmed by a case-study of a set of strong and weak adjectives, viz. the importance adjectives *essential*, *crucial*, *important*, and the appropriateness adjectives *appropriate*, *fitting* and *proper* in chapter 5, section 2. The case-study showed that these adjectives first pattern with a particular semantic complement type, viz. mandative complements, before they can take another semantic type, viz. propositional complements. In addition, the two classes of adjectives appeared to differ in how they develop the **propositional pattern**. In the case of the importance adjectives, the single proposition pattern can be analysed as a combined mandative-propositional pattern from which the mandative *to*-clause – typically including a cognition verb, such as *note* or *remember* – has been dropped but remains in some sense implied (A > A+B > B). This development accounts 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 develop 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; the construction B thus expresses true non-modal evaluative meaning. In general, the two pathways sketched above confirmed that for certain lexical items deontic meaning is diachronically prior to non-modal evaluative meaning.

Generalizing from the diachronic case-studies summarized above, I proposed two **conceptual hierarchies**, for strong and weak adjectives respectively, which apply in both diachrony and synchrony (see chapter 5, section 3). 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 chapter 2, section 2.1), 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, the general account of the diachrony of clausal complement patterns also showed that the conceptual map applies across time. In chapter 4, 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, a closer study showed 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. In fact, 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. More precisely, 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.

In addition to the diachronic validity of the conceptual map, I also adduced evidence for its **validity across constructions**. The study of the post-adjectival infinitive construction

(PAC) presented in chapter 5, section 1 showed that the conceptual and lexico-semantic distinctions found for the extraposition construction (EC) are at work in the PAC as well. Within the class of constructions that are traditionally analysed as *tough*-constructions, I distinguished between characteristic-oriented constructions (e.g., *it* [i.e. liquor, AVL] *will be fine and fit to bottle* (CLMETEV 1732)), which are evaluative in meaning, and activity-oriented constructions (e.g., *the only part of it* [i.e. an article of a charge, AVL] *necessary to be examined* (CLMETEV 1740–1741)), which have a deontic flavour. It was found that the distribution of adjectives across the two types of construction is lexico-semantically conditioned in much the same way as in the EC: strong adjectives are restricted to the activity-oriented PAC, while weak adjectives are found in both activity- and characteristic-oriented constructions. The distinction between these two types of construction also served well to explain the development of the formal types of post-adjectival *to*-clauses: from Early Modern English onwards, activity-oriented *to*-clauses tended to adopt the passive *to*-infinitive, which emerged in the Middle English period, whereas characteristic-oriented *to*-clauses typically retained the active *to*-clause. In any case, the study of the PAC showed that the conceptual map applies across at least two different constructions.

Thirdly, this study elaborated on the **synchronic validity** of the conceptual map as well. The in-depth investigation of Present-day English constructions, reported on in chapter 6, 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. Within the conceptual area, the adjectives studied appeared to be able to express a wide range of meanings, some of which clearly correlate with specific constructional patterns. In particular, the non-modal evaluative locative and knowledge/acquisition of knowledge (KAK) constructions, as well as the deontic mental focus construction were analysed as partially filled constructions in the sense of Goldberg (1995). Within the illocutionary area, I distinguished between SoA-related and speaker-related uses of directive expressions, a distinction proposed for deontic expressions as well, and previously observed for other linguistic domains like that of interclausal relations (cf. Davies 1979: 146–176; Sweetser 1990: 76–112; Verstraete 2007: ch. 9). With respect to deontic and directive expressions, SoA-related uses refer to actions in the outside world (e.g., *it was appropriate to prescribe tranquillisers 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)). On the basis of this detailed study, it was possible to locate each of the adjectives studied within the finer subcategories of the conceptual map (chapter 6, section 5, Figure 6.8). The result generally confirmed 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 substantiates and synthesizes 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 (CTPs) (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 chapter 5, section 2.2.1). 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 4 and 5 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 6 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 expression (see chapter 3). In fact, 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 3) 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 modality 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 1), 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 study, viz. 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 1, the two domains have been added right above the parameter which they highlight as most salient. More generally, this conflict suggests that the two domains covered in this study are of a different nature, and provide alternative perspectives on the same phenomenon. In any case, the major findings of this study discussed above showed 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 regarded as 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 various languages divide a particular semantic/conceptual space among their lexical and/or grammatical items, both with regard to diachrony and synchrony (Van der Auwera and Plungian 1998: 86; Haspelmath 2003). The discussion of the main findings of this study suggests that the status of the map cannot be determined straightforwardly. The conceptual map can be viewed as a semantic map in that it accommodates pathways of change for specific lexical items and constructions. In addition to this diachronic validity, it also applies in synchrony, in that the linguistic items meet the adjacency requirement: in the map, the different 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 supposed to have universal relevance. It has been designed on the basis of English data, and arguments have been proposed for its language-specific validity, but it has not been tested cross-linguistically. In this sense, the organization of the map opens up new perspectives for further research: it may be interesting to take the conceptual map into typology and investigate whether it also applies cross-linguistically. In this perspective, the semantic properties of relationality and potentiality proposed in chapter 3 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. In addition, they can be used to distinguish various stages in the semantic development of these items. 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.

With regard to the domain of complementation, the use of the term 'complementation' for the constructions included in the conceptual map warrants further reflection as well. More particularly, 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, viz. 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 et al. 1999: 155, 672–674, 720–722, Huddleston and Pullum 2002: 1252–1254) (see chapter 4, section 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 'conjugational' 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).[1] The more specific type of conjugational relationship involved here is one of **scoping**: the scoping clause (*it was 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 study: 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 (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 (6.53) from chapter 6, section 3.1.1. As mentioned in chapter 6, 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] This whole-whole relation thus links two clauses, rather than a clause and a predicate. In fact, conjugational 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)).

(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 £ 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 2002: 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 study. 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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