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### **Cover sheet**

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### **Bionote**

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## **Abstract**

This study examines how extraposition constructions with adjectives, such as *it is important to honour those who have done honour to us* (CB) function in the deontic and directive domain. It is found that in these two domains, which correlate with different sets of adjectives, the adjectival expressions can function on two distinct levels, either relating to the real world (State of Affairs (SoA)-related), or relating to the speaker's argumentative goals (speaker-related). These levels have also been noted for other linguistic categories, such as interclausal relations (e.g., Davies 1979; Sweetser 1990; Verstraete 2007). Within the set of speaker-related uses, a further distinction will be proposed between text-building uses and mental focus on a proposition uses. The first type serves to build arguments, or to specify or justify the organization of a text. The second type is used to make the hearer focus mentally on a propositional content. It will be argued that this latter type is a partially filled construction in the sense of Goldberg (1995). In this sense, this study proposes a constructionally motivated typology of extraposition constructions in the deontic-directive domain.

## **Keywords**

Extraposition; Adjectives; Deontic modality; Illocution; Partially filled construction

## 1. Introduction<sup>1</sup>

Discourse approaches to extraposition have generally focused on information structure (cf. Huck and Na 1990; Herriman 2000a; Netz and Kuzar 2007) and the interpersonal (evaluative, modal, etc.) meanings conveyed by the matrices and various classes of postverbal complements (cf. Herriman 2000b). This study concentrates on one particular type of extraposition constructions, viz. with deontic adjectival matrices as in (1) to (3), and is more constructionally oriented: it proposes a typology that is supported by form-meaning correlates. In a first step, it distinguishes between illocutionary and attitudinal constructions (cf. Nuyts et al. 2005, 2010), and in a second step it discriminates between two levels on which these constructions can function, i.e. one relating to the extralinguistic world, and one relating to the speaker's argumentative goals. In a third step, finally, this study puts forward two subtypes of speaker-related uses.

Traditionally, deontic modality has been defined in terms of the notions of obligation and permission: deontic meanings of verbs like *must* express an obligation to carry out a particular activity, while deontic meanings of verbs like *may* express permission to do it (cf. von Wright 1951a, 1951b, 1971; Lyons 1977: 823–841; Palmer 1979: 58–70, 1986: 96–115; Kratzer 1978: 111; Van der Auwera and Plungian 1998: 81). Adjectives that can encode such meanings include *compulsory*, *mandatory*, *obligatory*, which report on the existence of an obligation as in (1), and *advisable*, which reports on the existence of a recommendation or counsel, much like the modal auxiliary *should*. However, more recent accounts have proposed that it is necessary to make a distinction between obligation and permission on the one hand, and the notion of desirability on the other hand. In this respect, Nuyts et al. (2005, 2010) argue that the former are illocutionary (directive) notions, pertaining to the interactional system of language, whereas the latter involves attitudinal meaning, which serves to qualify States of Affairs (SoAs). Interestingly, if we look for adjectives that can be used to assess the desirability of SoAs – without imposing an obligation or granting permission, we end up with a set of adjectives that is very different from the 'directive' adjectives mentioned above. Examples are given in (2) and (3).

- (1) 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)<sup>2</sup>
- (2) The United Nations as an organisation of governments has traditionally only worked on the government side in civil conflicts. But Mr La Muniere said that the Angolan government had realised that the assistance provided to Angolan suffering because of the war and the drought was failing to reach a large number of their people who were living in areas controlled by Unita, that this was not right and that it would be **necessary** to devise means of reaching all the people of Angola. (CB, bbc)
- (3) The SNP are moving ahead because we are Scotland's party and it is entirely **proper** for Scots to prefer a home-based product to Blair's Millbank mouthpieces. (CB, sunnow)

In (2), the Angolan government regards it as highly desirable all the people in the conflict zones are reached. In (3), the speaker regards it as proper that Scots prefer the Scottish National Party to Labour. Both examples involve an attitudinal judgement of desirability on the part of the (reported) speaker, but – unlike the expression with *obligatory* in (1) – they do not encode the illocutionary meaning of obligation. These

examples thus support the need to distinguish between illocutionary directive and qualificational deontic meaning, as proposed by Nuyts et al. (2005, 2010), as the two types of meaning correlate with distinct sets of adjectives (cf. Van linden 2009: 36–42, forthcoming b). Still, the adjectival data also suggest that deontic and directive meaning are not unrelated. One reason is that the hearer may infer a directive meaning from a deontic expression as a preferred interpretation (Levinson 2000), but this remains a cancellable implicature: the reported speaker of (2) may say “I just said it is necessary to devise means of reaching all the people of Angola, I did not tell you to take steps yet”. Another reason is that speakers may intend to perform a directive speech act but choose to use a deontic expression in order 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). In the remainder of this article, the term ‘deontic’ will refer to attitudinal meaning only.

In this article, I will focus on these two sets of adjectives, and I will argue that deontic and directive extraposition constructions can function on two distinct levels, either relating to the real world (SoA-related), as in (1) to (3) above, or relating to the speaker’s argumentative goals (speaker-related), as in (4). This same observation has been made for interclausal relations, which (may) have a modal flavor (e.g., Davies 1979: 146–176; Sweetser 1990: 76–112;<sup>3</sup> Verstraete 2007: 227–243). In the typology of extraposition constructions proposed here, it is especially speaker-related uses that have gone unnoticed so far.

- (4) This chapter is primarily concerned with underdevelopment theory but, as with modernization theory, it is **necessary** to say something about its historical antecedents. Underdevelopment theory (UDT) arose as much as a reaction to classical Marxism as from deeply held objections to modernization theory. (CB, ukbooks)

Whereas the construction with *necessary* in (2) expresses someone’s (viz. the Angolan government’s) commitment to the realization of an SoA in the real world, the one in (4) serves to indicate the structure of a text. This type of speaker-related use will be termed the ‘text-building’ use. In addition, I will also distinguish a second type of speaker-related use, viz. the ‘mental focus’ use, illustrated in (5) below.

- (5) It is **essential** to note that Berger and Luckmann emphasized that human society can be regarded as both objectively experienced and individually created. (CB, ukbooks)

In (5), the writer uses the deontic expression to encourage the reader to focus mentally on a particular propositional content. In contrast to the text-building use, I will show that this speaker-related type has specific formal properties. Most notably, it involves a combined pattern of complementation, viz. a *to*-clause complemented by a *that*-clause. I will argue that this second type can be conceived of as a partially filled construction in the sense of Goldberg (1995): it consists of a specific number of structural slots, some of which can only be filled with a limited set of lexical items, and its specific semantic-pragmatic value is not fully predictable from its component parts. *Important* will appear to be its model adjective.

The structure of this article is as follows. Section 2 discusses the data and methods used in this study. Section 3 explains the distinction between SoA-related and speaker-related uses of deontic expressions in more detail. Section 4 focuses on the

two subtypes of deontic speaker-related uses, viz. text-building and mental focus uses, and the discourse contexts they are used in. Section 5 concentrates on the uses found with directive adjectives. Section 6, finally, draws conclusions and formulates some questions for further research.

## 2. Data and methods<sup>4</sup>

As mentioned above, this study investigates extraposition constructions with directive adjectives and adjectives that express deontic notions, such as goodness, properness, desirability or necessity. On the basis of these notions, I collected the Present-day English dataset of adjectives, given Table 1, using *Roget's Thesaurus* (Dutch and Roget 1970) together with the online *Oxford English Dictionary* (OED).

<Table 1 about here>

The table distinguishes between weak and strong adjectives. For the deontic adjectives, this distinction is motivated semantically in that strong adjectives, such as *necessary* in (2), express a stronger degree of desirability than weak ones, such as *proper* in (3) (cf. Övergaard 1995: 85; Huddleston and Pullum 2002: 997). The two classes also differ in terms of the functional complement types they pattern with. Strong adjectives only take mandative complements in deontic constructions, as in (2), whereas weak adjectives are found with both mandative complements, as in (3), and propositional complements, as in (6) below. Whereas mandative complements depict desired – and hence as yet potential – SoAs, propositional complements designate propositions presupposed to be true. The meaning of these constructions as a whole is purely evaluative, rather than deontic, in that they do not have any volitional flavor (for a more detailed discussion of the difference between mandative and propositional complements, see Van Linden and Davidse 2009).

- (6) 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)

As the focus of this article is on deontic constructions, examples such as (6) have been excluded from the analysis. For the directive adjectives, the distinction between weak and strong basically boils down to the meanings of advice versus obligation. Neither of the two types, however, patterns with propositional complements.

The adjectives listed in Table 1 were searched for in the British English subcorpora of the COBUILD corpus Bank of English (CB) (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. In addition to the corpus data, I also used examples from the Internet.

The corpus data were analyzed in two different ways. The most comprehensive analysis is a qualitative and quantitative study of the 22 adjectives listed in Table 1, in either exhaustive samples (smaller than 200), or random samples of 200 instances. The number of instances studied for each adjective is given in Table 1. In addition, I used a type of collocation analysis, viz. a multiple distinctive collexeme analysis (Gries and Stefanowitsch 2004). Such an analysis starts with a particular construction,

like the extraposition construction with adjectival matrices studied here, 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)”, like the *to*-infinitive slot of the extraposition construction with the several adjectives (Stefanowitsch and Gries 2003: 214). 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, four frequencies are needed: (i) the frequency of I in extraposition constructions with A, (ii) the frequency of I in extraposition constructions with adjectives other than A, (iii) the frequency of A with *to*-infinitives other than I, and (iv) the frequency of *to*-infinitives other than I with all adjectives other than A (cf. Stefanowitsch & Gries 2003: 218). On the basis of these frequencies, a collexeme analysis computes a vast amount of probability tests (viz. Fisher-Yates exact tests cf. Pedersen 1996), which for each adjective results in specific p-values indicating the collocation strength with each *to*-infinitive. The present analysis is based on exhaustive extractions of the extraposed *to*-clauses with of the same adjectives in Table 1. For each adjective, the number of instances is given in Table 2. The results will provide evidence for the analysis of the speaker-related mental focus construction as a partially filled construction proposed in Section 4.2, and it will bring some differences to light between the deontic and directive adjectives.

<Table 2 about here>

### 3. SoA-related and speaker-related deontic uses<sup>5</sup>

In the sample, the majority of deontic constructions – with weak or strong adjectives – express the desirability for someone to carry out a particular SoA in the real world, as in (7) below. Interestingly, 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 (8) below, to build an argument, or to focus the hearer/reader’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: 227–243).<sup>6</sup>

- (7) But Minister O’Donogue [sic] stressed the measures were only aimed at immigrants who tried to bypass the legal refugee system. He said: “It is **vital** to send out a clear signal to those who are engaged in the organisation of trafficking of illegal immigrants. Further exploitation of immigrants and evasion of immigration procedures will not be tolerated.” (CB, sunnow)
- (8) 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 (7) the SoA that is assessed as highly desirable clearly is an event in the real world: sending out a signal to human traffickers is something that can only be carried out in the extra-linguistic world. Intuitively, it is this SoA-related use that constitutes the core meaning of desirability, which is confirmed by its frequency relative to the speaker-related use, cf. Table 3. In (8), by contrast, the SoA assessed as desirable

relates to text structure and the deontic expression as a whole serves the writer's argumentative goals. More precisely, it is used to indicate that the writer has finished the body of the text and now proceeds to the conclusion. These examples thus illustrate that deontic constructions can function on two levels, viz. an SoA-related and speaker-related level. Table 3 shows that in the case of the adjectives studied the former use is far more frequent than the latter, which might be explained by the discourse preferences of the two types on the one hand (see below), and the composition of the corpus on the other (see Section 2).

<Table 3 about here>

In the corpus, the SoA-related uses occur in a wide variety of genres. They often turn up in newspapers and radio broadcasts in contexts of quoted or reported speech, in which the (reported) speaker ventilates his/her opinion about a specific state or event, as in (7). They also occur in small advertisements, as in (9), expressing practical advice. Less frequent are uses in spontaneous dialogue, as in (10). In terms of Martin and White's (2005: 35) theory of appraisal, all examples have to do with 'engagement', i.e. with "sourcing attitudes and the play of voices around opinions in discourse" (2005: 35), and more specifically with 'entertain': the authorial voice in the discourse "indicates that its position is but one of a number of possible positions" (Martin and White 2005: 104, 110–111).

- (9) <h> Payment </h> We accept Access, Visa and American Express. (...) The balance must be paid on or before delivery. <h> Care of Futon </h> It is **essential** to air and turn your futon regularly. We recommend that you use your futon with a wooden base (...). (CB, ukephem)
- (10) Erm <tc text=pause> it seemed to me **crucial** that the play had to have a future. If it was really merely retrospective then it would fall into the trap <ZF1> of <ZF0> of being what I call a one-woman-show (...). (CB, ukspok)

#### 4. Types of speaker-related deontic uses<sup>7</sup>

Within the new category of speaker-related extraposition constructions proposed here, it is useful to further distinguish between two subtypes, viz. a text-building and a mental focus type. The first pertains to a text as a writer's artefact (Section 4.1). The second type involves the speaker/writer urging the hearer/reader to focus mentally on a particular propositional content (Section 4.2). It will be argued that this second type can be conceived of as a partially filled construction in the sense of Goldberg (1995).

##### 4.1. Text-building use

As mentioned above, writers can use deontic expressions in construing texts. In the data, these text-building examples are restricted to factual genres, especially to expository writings (cf. Martin 1992: 562–563); they all come from books or magazines. Basically, two types of discourse semantics can be distinguished. A first, rather infrequent type was illustrated in (8), and serves to indicate the macro-structure of an exposition (introduction-body-conclusion). A second, very frequent type is illustrated in (11) and (12), and has the text-cohesive function of signaling one logical step in the argumentation, typically in the body of an expository text investigating a particular research question. In (11), the writer is listing and discussing the characteristics of world systems theory and (s)he uses the deontic construction to indicate that (and why) (s)he will go on to the fourth characteristic, viz. unequal exchange. The context makes it clear that it is the writer him/herself who is going to

focus on that topic; the following stretch of discourse does deal with the fourth characteristic. The deontic construction thus justifies the contents of the ensuing discourse.

- (11) 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)
- (12) Its collection is rated as one of the finest in the world and contains such highlight as Botticelli's Birth of Venus and Michelangelo's Holy Family. In order truly to understand the significance of Tuscan art, however, it is **necessary** to view it in its original sacred context. Florence is studded with churches crammed with art treasures. The mint and vanilla hued Santa Maria Novella owes its facade to Alberti. (CB, ukmags)

In (12), the deontic construction is used to express the writer's idea that if we want to understand the significance of Tuscan art, referred to in the previous discourse by names of Botticelli and Michelangelo, we have to view it in its original sacred context. Again, the writer uses the deontic expression to move on with his/her text: it justifies why the following discourse mentions the abundance of churches in Florence, crammed with art treasures. Thus, text-building constructions serve to bring across the writer's opinion and strengthen his/her arguments, or to indicate or motivate the structure of the discourse. These constructions therefore clearly differ from estimations of desirability of actions in the outside world.

The text-building constructions show some structural similarities to a certain extent. All matrices are copular constructions, typically with a present indicative finite or tentative *would*, locating the assessment in the here-and-now of the writer's text-building activity. However, the examples also show variety in the formal type of complement (*that-* or *to-*clauses), and, within the group of *to-*infinitive constructions, in the type of subject referent. That is, the implied infinitival subjects can have either specific reference, as in (8) and (11), with the implied subjects being co-referential with the writers, or arbitrary reference, as in (12), with the implied subjects being anyone. In the sample, the examples with weak adjectives all involve specific reference, whereas the examples with strong adjectives can be of either type.<sup>8</sup> Table 4 presents the adjectives found in text-building constructions and it indicates the frequency of the formal types of complement. Table 5 summarizes the tense-aspect-mood (TAM) characteristics of the matrix finite forms.

<Table 4 about here>

<Table 5 about here>

#### 4.2. Combined pattern of mental focus on proposition



The deontic mental focus type has a specific semantic-pragmatic value, in that it is used by the speaker/writer to make the hearer/reader focus on the propositional content of the secondary *that*-clause. The data show that it occurs in more diverse genres than the text-building subtype. Most frequently (and across various genres), the mental focus construction is used to foreground a particular piece of information or opinion in a context of contrast. In the newspaper interview in (13), for instance, the speaker, Johansson, reports on a conflict about or within Fifa, and uses the mental focus construction to foreground or emphasize the most important point of his stance.

- (13) 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.” (CB, times)

Another type of contrast is present in (14), taken from a magazine. Here, the writer singles out the method of one photographer, which differs from ‘mainstream’ photography. The mental focus construction presents the most important warning or counsel when using the special method.

- (14) Jonathan Seamons of Hayues in Middlesex has been taking pictures for three months (...). Jon is one of the few people who use a 200mm as a standard lens, but with a lens of this length it’s **vital** to remember that you won’t get the best out of it unless you either bolt is on a steady tripod or shoot at faster than 1/250 sec. (CB, ukmags)

In the radio interview in (15), the speaker develops an argumentation that draws on the contrast between what we nowadays expect from our partner to what we used to do. Here, the mental focus construction foregrounds the conflicting nature of these two facts.

- (15) 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)

In addition to contexts of contrast, mental focus constructions are sometimes used to remind the hearer/reader of an existing regulation, as in (16).

- (16) It is the ‘law of the land’ that children under 12 years of age cannot be admitted to a ‘U’ or ‘PG’ film after 7 pm unless they are accompanied by an adult, it is also **important** to note that all children must be paid for and that babies in arms regretfully cannot be admitted to any part of the programme. (CB, ukephem)

Interestingly, the expressions above share a particular constructional make-up. They all have a combined pattern of complementation, with a primary *to*-clause in turn complemented by a (secondary) *that*-clause. The extraposed *to*-infinitival subject invariably contains a cognition predicate, whose SoA is – like the ones in the text-building type – 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. Unlike in the text-building type, however, implied subjects of the *to*-infinitives have arbitrary reference, so that by definition the hearer/reader is included. Finally, all matrices have an affirmative present indicative copular finite form. Together, these specific formal and semantic properties give rise to the specific semantic-pragmatic meaning of the construction as a whole: the speaker/writer encourages the hearer/reader to consider the propositional content encoded by the secondary *that*-clause. This meaning is consistent with the properties mentioned above (e.g., the matrix finite forms locate the speaker/writer’s action of urging the hearer/reader in the here-and-now of the speech situation), but it cannot be compositionally derived from them. We can therefore conclude that the deontic mental focus construction is a construction in the sense of 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)

I will argue below that it even constitutes a partially filled construction.

The constructional nature of the mental focus construction is corroborated by the meaning of very similar – yet somewhat different – constructions, containing a verbalization predicate instead of a cognition predicate. The following examples show that the more a construction differs from the mental focus construction in terms of predicate in the *to*-clause, matrix construction, and polarity and TAM marking of the matrix finite form, the less it fulfils its specific function.

- (17) 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)
- (18) Ian Stevenson, “The ‘Perfect’ Reincarnation Case”, in William G. Roll, Robert L. Morris and Joanna Morris, eds., *RIP* 1972. The Scarecrow Press, 1973, pp. 185 - 187. Describes all the features of a perfect reincarnation case. It should not be **necessary** to add that such a case has not been found. (CB, ukbooks)
- (19) 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 (13) to (16) above, the matrix *Parker sees fit* in (17) is a complex transitive construction (cf. Quirk et al. 1985: 54). 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. The complex transitive matrix construction construes alignment between the writer with the reader, and disalignment from the represented speaker (Parker) and his readers (cf. Martin and White 2005: 92–160). In the next sentence, Parker’s action of informing us of some juicy details is explicitly frowned upon by the writer. Examples (18) and (19) both have copular matrix clauses. In (18), 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 (19), finally, has all the characteristics of the matrix of the deontic mental focus type, i.e. it has an affirmative present indicative copular finite form. Unsurprisingly, 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 type of predicate (verbalization instead of cognition) and the referential properties of the infinitival subject: the understood subject of the *to*-clause in (19) (and [17]–[18]) has specific reference (it is the writer who should stress the propositional content of the *that*-clause), whereas the subjects in examples (13) to (16) above have arbitrary reference, so that the *to*-clauses can more readily be interpreted as appealing to the hearer/reader. Examples (13) to (19) thus show that it is only the specific constructional make-up of the mental focus construction that gives rise to the meaning of a speaker/writer making the hearer/reader focus on a particular propositional content. To conclude, Table 6 shows the adjectives found with cognition and verbalization *to*-clauses complemented by secondary *that*-clauses, and Table 7 details the formal features of the matrix finite forms.

<Table 6 about here>

<Table 7 about here>

It is clear from Table 6 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 Section 2). Table 8 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. In Table 9, the lexical items have been collapsed into broad semantic classes of predicates based on Halliday (1994: 106–144).

<Table 8 about here>

<Table 9 about here>

Both tables show that *important* prefers cognition verbs in its *to*-clausal complements. The three most strongly attracted collexemes (i.e. with the smallest p-values) 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 [19]). It can be seen in Table 8 that the frequencies of these verbs are significantly higher than what would be expected on a chance level (with  $\alpha=0.05$  as

the standard level of significance, cf. Stefanowitsch and Gries 2003: 239, note 6). The table also indicates that these results remain statistically significant after the Bonferroni correction.<sup>9</sup> Therefore, compared to the other 21 adjectives included in the multiple distinctive collexeme analysis, *important* stands out as preferring cognition verbs in the extraposed *to*-infinitive construction.

In Tables 10 and 11 below, I present the ten most strongly attracted items of the four other adjectives found in the deontic mental focus construction (see Table 6 above).

<Table 10 about here>

<Table 11 about here>

As suggested by the low frequency of *good*, *essential*, *necessary* and *vital* in the mental focus construction (see Table 6), it can be noted that none of the ten most strongly attracted items of these four adjectives includes a cognition verb that can be used in this construction. These tables thus confirm that *important* is the model adjective of the mental focus construction, which is consistent with the diachronic analysis of this construction proposed in Van Linden and Davidse (2009). All in all, the discussions above lead us to conclude that the deontic mental focus construction is a partially filled construction with a limited set of lexical items patterning in two of its six slots (in boxes), as shown in Figure 1.

<Figure 1 about here>

## 5. SoA-related and speaker-related directive uses<sup>10</sup>

As mentioned above, directive meaning is different from deontic meaning in that it expresses an illocutionary type of meaning, relating to the interactional function of language, whereas the deontic category is conceptual in nature and pertains to the system of qualifications of SoAs (cf. Nuyts et al. 2005, 2010). However, in this section it will become clear that the two categories share the same semantic subtypes to some extent, since directive constructions – like deontic ones – can have SoA-related uses as well as speaker-related uses. The adjectives focused on here are *advisable*, *compulsory*, *mandatory* and *obligatory*, which report on the existence of a recommendation or obligation.<sup>11</sup>

Analysis of directive extraposition constructions shows that the distinction between speaker-related and SoA-related expressions holds for directive adjectives as well. Example (20) illustrates SoA-related use of a directive expression. Speaker-related uses are very infrequent in the sample, with only one expression with weak *advisable* in (21). Internet searches yield more examples, such as, for instance, (22) with strong *obligatory*, but these are very infrequent, and arguably of marginal acceptability.

- (20) 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)
- (21) In our analysis of Cardoso/Faletto and of Frank we have encountered two related but significantly divergent intellectual outlooks claiming the mantle of dependency theory. Before proceeding on our survey of neo-Marxist thought on underdevelopment, it would therefore be **advisable** to formulate a more precise definition of the concept and the theoretical contents of dependency.

During the nineteenth century, the condition of dependency referred to colonies of conquest, at least in British usage. To Lenin it referred indistinctly to colonies and so-called semi-colonies, including the Latin American republics, a usage that continued through Comintern congresses and on to Stalinist dogma and propaganda. (CB, ukbooks)

- (22) 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 (20) illustrates the SoA-related use of *advisable*: getting the suspension of a car strengthened for rallying clearly relates to the outside world. The expression in (21), by contrast, is used to serve the writers' argumentative goals in building a text. It indicates and justifies that the writers 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 construction signals a logical step in the argumentation, and motivates why the following stretch of discourse lists views on exactly the concept and theoretical contents of dependency. The directive construction in (22) is found in the final section of a paper on renal glomerular capillaries, and it is used by the writers 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 (8), it justifies the contents of the following discourse. The examples therefore illustrate that constructions with the directive adjectives *advisable* and *obligatory* – like with deontic adjectives – can function on two distinct levels, viz. an SoA-related and speaker-related level.

In addition to the text-building uses, directive adjectives are also infrequently found in the other type of speaker-related use, viz. the mental focus construction. No examples are attested in the corpus data, but again Internet searches yield a few relevant hits, as shown in (23) to (25). Like (22), however, they seem to be of marginal acceptability.

- (23) Good advice is very rare, and one finds few people (if any) to give one sensible suggestions at this important juncture of one's life. It is always **advisable** to remember that this is your existence, your precious time on this precious earth. It would be such a shame if a single day got wasted.  
(<http://www.jamboree.freedom-in-education.co.uk/school/school.htm>, accessed on 1 Sept 2009)
- (24) It is **mandatory** to realize that expression of aggression by physically hurting others or abusing will worsen the situation. Count before you speak, take deep breaths or go for a walk for avoiding outbursts.  
(<http://www.controlyouranger.info/angermanagementtechniques.html>, accessed on 1 Sept 2009)
- (25) It is also wise to remember that the oxygen available from the local garage or engineering workshop will serve just as well as medical oxygen, and it is

**obligatory** to remember that if for any reason the flow of oxygen into the incubator fails or is interrupted, the plastic top must immediately be removed. (<http://196.33.159.102/1969%20VOL%20XLIII%20Jul-Dec/Articles/08%20August/4.9%20BOOKS%20RECEIVED.pdf>, accessed on 1 Sept 2009)

All examples show the same constructional make-up as the deontic examples in (13) to (16) above, with an affirmative present indicative copular finite form and an extraposed *to*-infinitival subject that contains a cognition predicate and a secondary *that*-clause. The semantic-pragmatic meaning of the constructions is also very similar to the one described for the deontic mental focus constructions: the speaker/writer encourages the hearer/reader to consider the propositional content encoded by the secondary *that*-clause. In fact, the literal compositional meaning even seems infelicitous, as it is hard to advise or oblige anyone to perform a cognitive process such as remembering or realizing in that you can never check whether this person has carried out the expected action. In this sense, examples such as (23) to (25) adduce additional evidence for the constructional nature of the mental focus pattern proposed in Section 4.2.

However, the low frequency and sometimes marginal acceptability of the speaker-related subtypes suggest that directive adjectives do not sit well with the speaker-related functions. A further difference from deontic adjectives appears if we take a closer look at the type of SoAs referred to in the complements of directive constructions. It is striking that these typically involve fairly practical actions, which may require some know-how but whose actualization can be verified more or less objectively, as in (1) and (20). The results from the distinctive collexeme analysis seem to confirm the tendency of directive adjectives to combine with practical actions. In Tables 12 and 13, 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.<sup>12</sup> Of course, such *to*-clauses may also occur in deontic constructions, but the main difference here is that they are typical of directive constructions, while deontic constructions may also involve more abstract actions. In (26), for example, the desired action of overcoming the social stigma of Aids may be hard to put into practice – it is not straightforward to think of a concrete step-by-step plan to make it happen – and to verify.

- (26) 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)

<Table 12 about here>

<Table 13 about here>

In summary, directive constructions with the adjectives studied here report on the existence of a recommendation or obligation to carry out a particular practical action, but do not involve assessments in terms of desirability. They are most frequently found in SoA-related uses, and only marginally in speaker-related uses, as shown in Table 14. Especially the mental focus examples from the Internet seemed to be rather

strange. Nevertheless, these uses can be argued to substantiate the constructional nature of the mental focus pattern, as the literal meaning of advising or obliging someone to carry out a cognition act seems somewhat infelicitous.

<Table 14 about here>

## 6. Conclusion

In this study, I have focused on one particular class of extraposition constructions, with deontic and directive adjectival matrices, and I have proposed a typology of these constructions from a constructional perspective. Firstly, I have disentangled illocutionary directive and qualificational deontic constructions (cf. Nuyts et al. 2005, 2010), which correlate with distinct sets of adjectives (cf. Table 1). Secondly, I have argued that deontic and directive constructions can function at two levels: (i) they can be used to express desirability or report the recommendation or obligation of action in the outside world, or (ii) 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 and directive constructions, much in the same vein as put forward for interclausal relations (Davies 1979: 146–176; Sweetser 1990: 76–112; Verstraete 2007: 227–243). Within the set of speaker-related constructions, I have proposed a further distinction between text-building constructions 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, and is restricted to factual genres in the corpus. It has been defined on mainly semantic grounds, as the instances share some but not all constructional features. The second type, by contrast, is a partially filled construction in the sense of Goldberg (1995), with *important* as model adjective. It is typically used to make the hearer/reader focus mentally on the propositional content of the secondary *that*-clause in contexts of contrast, across various genres.

With this distinction between SoA-related and (types of) speaker-related constructions, I have made semantic refinements of categories that have previously been treated as fairly homogeneous types in the literature. Many accounts only include the SoA-related uses under the rubric of deontic and directive meaning. In the data presented here, SoA-related uses are overwhelmingly frequent (cf. Tables 3 and 14). Speaker-related uses, by contrast, have not been noted so far. The data have shown that they are far less frequent and more restricted in terms of genre and discourse contexts.

More generally, the discussion of SoA-related and speaker-related uses invites us to reflect more thoroughly on the distinction between deontic and directive meaning. Although the two types of meanings are associated with different sets of adjectives, they share similar subtypes of meanings and uses, as visualized in Figure 2. However, the nature of the directive mental focus data suggests that we cannot assume the typology of deontic and directive extraposition constructions to be fully identical, cf. the dashed box of the directive mental focus type in Figure 2. The similarity of the two categories may explain why they have typically been conflated in the literature (as discussed in Nuyts [2005, 2006]). In fact, both categories involve potential actions which are by default realized in the future (cf. Bolinger 1967: 356–359; Palmer 2001: 8; Verstraete 2007: 42–46). In addition, they also relate to human beings, either as the source of attitudinal assessment or as the source of the recommendation or obligation. As this study on adjectival constructions has contributed to our understanding of the differences and similarities between the deontic and directive domain, I believe it may be useful to take a look at the uses and collocational patterns of yet different formal types of expression to further advance our insights in this intricate matter.

<Figure 2 about here>

## Notes

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<sup>2</sup> The synchronic data used in this article were extracted from the COBUILD corpus via remote log-in and are reproduced (in each case marked with CB) with the kind permission of HarperCollins Publishers.

<sup>3</sup> In her discussion of interclausal relations, Sweetser (1990: 76–112) distinguishes between the content, epistemic and speech act domain, which corresponds to Verstraete's (2007: 227–243) distinction between SoA-related, speaker-related argumentative and speaker-related speech act levels in the same linguistic category. Sweetser (1990: 49–75) applies the same distinction to the category of modality, in which the content domain corresponds to root meanings of modal auxiliaries, the epistemic domain to epistemic meanings, and the speech act domain to conversational meanings, as in *He may be a university professor, but he sure is dumb*. In this article, however, I use the distinction between SoA-related and speaker-related levels within two specific modal categories, viz. deontic and directive meaning.

<sup>4</sup> This section is based on Van linden (2009: 62–73; forthcoming a, b).

<sup>5</sup> This section is based on Van linden (2009: 272–274; forthcoming b).

<sup>6</sup> On a lexical level, ordinal numbers like *first*, *second* and *third* have been argued to function on two similar levels, as they can relate SoAs temporally as well as relate parts of texts in various types of genre (cf. Halliday and Hasan 1976).

<sup>7</sup> This section is based on Van linden (2009: 274–283; forthcoming b).

<sup>8</sup> Unfortunately, I have not been able to determine why this is the case.

<sup>9</sup> 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 testing may falsely give the appearance of significance, as 1 out of 20 probability tests will appear to be significant at the  $\alpha=0.05$  level purely due to chance (Stefanowitsch pc). I thus multiplied the Fisher exact p-values by the number of tests run, viz. 22, to arrive at the corrected p-values.

<sup>10</sup> This section is based on Van linden (2009: 296–301; forthcoming b).

<sup>11</sup> These adjectives are thus restricted to descriptive directive expressions in contrast to, for example, imperative forms, which can only be used performatively (cf. Nuyts et al. 2005).

<sup>12</sup> 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.

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## Appendix: Figures

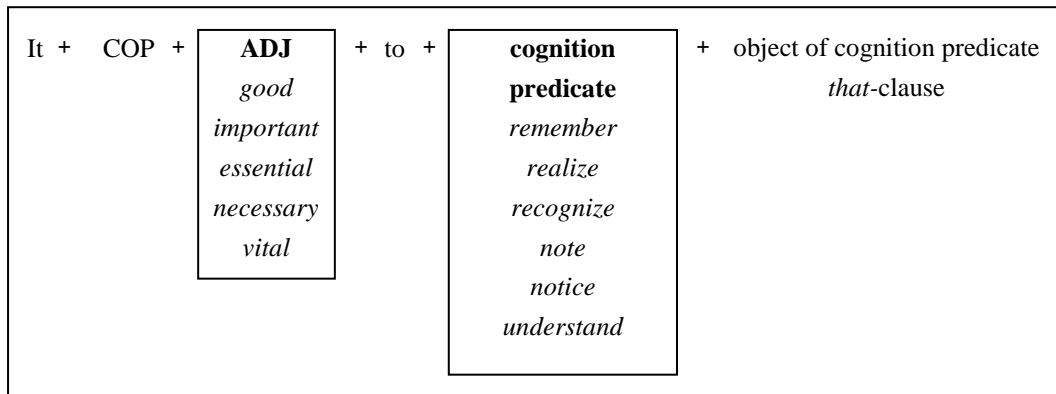


Figure 1: The deontic mental focus pattern as a partially filled construction

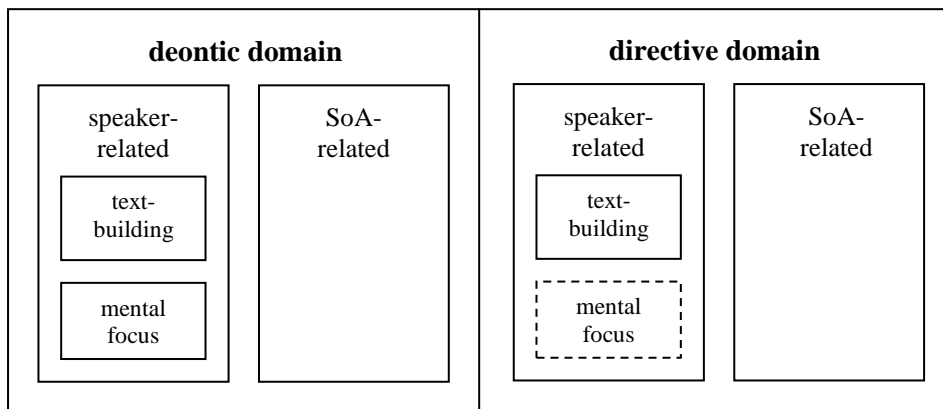


Figure 2: The types of deontic and directive meanings/uses

## Appendix: Tables

Table 1: The Present-day English dataset

Type of meaning	weak adjectives (12)				strong adjectives (10)			
deontic	<i>appropriate</i>	133	<i>good</i>	200	<i>critical</i>	12	<i>vital</i>	200
	<i>convenient</i>	33	<i>important</i>	200	<i>crucial</i>	52		
	<i>desirable</i>	31	<i>profitable</i>	7	<i>essential</i>	200		
	<i>expedient</i>	8	<i>proper</i>	25	<i>indispensable</i>	2		
	<i>fit</i>	49	<i>suitable</i>	5	<i>necessary</i>	200		
	<i>fitting</i>	37			<i>needful</i>	21		
directive	<i>advisable</i>	70			<i>compulsory</i>	17	<i>obligatory</i>	9
					<i>mandatory</i>	3		

Table 2: The adjectives and their number of *to*-clauses included in the multiple distinctive collexeme analysis

<i>advisable</i>	66	<i>desirable</i>	23	<i>important</i>	969	<i>profitable</i>	7
<i>appropriate</i>	88	<i>essential</i>	121	<i>indispensable</i>	2	<i>proper</i>	18
<i>compulsory</i>	15	<i>expedient</i>	8	<i>mandatory</i>	3	<i>suitable</i>	3
<i>convenient</i>	32	<i>fit</i>	49	<i>necessary</i>	478	<i>vital</i>	79
<i>critical</i>	5	<i>fitting</i>	6	<i>needful</i>	10		
<i>crucial</i>	23	<i>good</i>	278	<i>obligatory</i>	9		

Table 3: The frequency of SoA-related and speaker-related deontic uses

Adjective	Number of occurrences in the sample	Number of deontic uses	Types of deontic uses		% of deontic uses	
			SoA-related	speaker-related	SoA-related	speaker-related
<i>appropriate</i>	133	90	82	8	91.11	8.89
<i>convenient</i>	33	32	31	1	96.88	3.13
<i>desirable</i>	31	31	31	0	100.00	-
<i>expedient</i>	8	8	8	0	100.00	-
<i>fit</i>	49	49	48	1	97.96	2.04
<i>fitting</i>	37	5	5	0	100.00	-
<i>good</i>	200	74	72	2	97.30	2.70
<i>important</i>	200	193	170	23	88.08	11.92
<i>profitable</i>	7	7	7	0	100.00	-
<i>proper</i>	25	18	17	1	94.44	5.56
<i>suitable</i>	5	5	5	0	100.00	-
<i>critical</i>	12	10	10	0	100.00	-
<i>crucial</i>	52	48	47	1	97.92	2.08
<i>essential</i>	200	172	166	6	96.51	3.49
<i>indispensable</i>	2	2	2	0	100.00	-
<i>necessary</i>	200	154	129	25	83.77	16.23
<i>needful</i>	21	20	20	0	100.00	-
<i>vital</i>	200	184	181	3	98.37	1.63
total	1415	1102	1031	71	93.56	6.44

Table 4: The adjectives occurring in the text-building use

Adjective	Number of occurrences in the sample	Number of deontic uses	Number of text-building uses			% of text-building uses	
			<i>that</i>	<i>to</i>	total	relative to sample	relative to deontic uses
<i>appropriate</i>	133	90	1	7	8	6.02	8.89
<i>convenient</i>	33	32	0	1	1	3.03	3.13
<i>good</i>	200	74	0	1	1	0.50	1.35
<i>important</i>	200	193	0	1	1	0.50	0.52
<i>proper</i>	25	18	0	1	1	4.00	5.56
<i>essential</i>	200	172	0	1	1	0.50	0.58
<i>necessary</i>	200	154	1	18	19	9.50	12.34
total	991	733	2	30	32	3.23	4.37

Table 5: The T(A)M properties of matrix finite forms of the text-building use

Type of finite	Fr	Indicative forms		Modalized forms		
		pres	past	pres subj	<i>will</i>	<i>would</i>
matrix (32)		26	1	0	1	4
		81.25	3.13	0.00	3.13	12.50

Table 6: The adjectives occurring in the deontic mental focus type with cognition and verbalization predicates

Adjective	Number of occurrences in the sample	Number of deontic uses	Number of mental focus uses			% of mental focus uses	
			<i>that</i>	<i>to</i>	total	relative to sample	relative to deontic uses
<b>(i) cognition predicates</b>							
<i>good</i>	200	74	0	1	1	0.50	1.35
<i>important</i>	200	193	0	19	19	9.50	9.84
<i>essential</i>	200	172	0	3	3	1.50	1.74
<i>necessary</i>	200	154	0	3	3	1.50	1.95
<i>vital</i>	200	184	0	2	2	1.00	1.09
total	1,000	777	0	28	28	2.80	3.60
<b>(ii) verbalization predicates</b>							
<i>fit</i>	49	49	0	1	1	2.04	2.04
<i>important</i>	200	193	0	3	3	1.50	1.55
<i>crucial</i>	53	48	0	1	1	1.89	2.08
<i>essential</i>	200	172	0	2	2	1.00	1.16
<i>necessary</i>	200	154	0	3	3	1.50	1.95
<i>vital</i>	200	184	0	1	1	0.50	0.54
total	902	800	0	11	11	1.22	1.38

Table 7: The T(A)M properties of the matrix finite forms of the deontic mental focus type with cognition and verbalization predicates

Type of finite	Fr	Indicative forms			Modalized forms	
		pres	pres perf	past	<i>would</i>	<i>should</i>
<b>(i) cognition predicates</b>						
matrix (28)	n	27	0	0	1	0
	%	96.43	0.00	0.00	3.57	0.00
<b>(ii) verbalization predicates</b>						
matrix (11)	n	7	1	2	0	1
	%	63.64	9.09	18.18	0.00	9.09

Table 8: The collexemes most strongly attracted to and repelled by the *to*-infinitive slot of the extraposed *to*-infinitive construction with *important*

Distinctive for A ( <b>attracted</b> )					Distinctive for B ( <b>repelled</b> )				
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 9: The predicate classes attracted to and repelled by the *to*-infinitive slot of the extraposed *to*-infinitive construction with *important*

Distinctive for A ( <b>attracted</b> )					Distinctive for B ( <b>repelled</b> )				
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					
behavioral	1	0	4.23E-01	9.30E+00					

Table 10: The collexemes most strongly attracted to the *to*-infinitive slot of the extraposed *to*-infinitive construction with *good* and *essential*

<i>good:</i> distinctive for A ( <b>attracted</b> )					<i>essential:</i> distinctive for A ( <b>attracted</b> )				
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 11: The collexemes most strongly attracted to the *to*-infinitive slot of the extraposed *to*-infinitive construction with *necessary* and *vital*

<i>necessary:</i> distinctive for A ( <b>attracted</b> )					<i>vital:</i> distinctive for A ( <b>attracted</b> )				
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 12: The collexemes most strongly attracted to the *to*-infinitive slot of the extraposed *to*-infinitive construction with *advisable* and *compulsory*

<i>advisable:</i> distinctive for A ( <b>attracted</b> )					<i>compulsory:</i> distinctive for A ( <b>attracted</b> )				
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 13: The collexemes most strongly attracted to the *to*-infinitive slot of the extraposed *to*-infinitive construction with *mandatory* and *obligatory*

<i>mandatory:</i> distinctive for A ( <b>attracted</b> )					<i>obligatory:</i> distinctive for A ( <b>attracted</b> )				
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 14: The adjectives occurring in speaker-related and SoA-related directive uses

Adjective	Number of occurrences in the sample	Number of speaker-related directive uses			Number of SoA-related directive uses		
		<i>that</i>	<i>to</i>	total	<i>that</i>	<i>to</i>	total
<i>advisable</i>	70	0	1	1	4	65	69
<i>compulsory</i>	17	0	0	0	2	15	17
<i>mandatory</i>	3	0	0	0	0	3	3
<i>obligatory</i>	9	0	0	0	0	9	9
total	99	0	1	1	6	92	98