

On the multifaceted nature of English *of*-NPs
A theoretical, corpus, cotextual and cognitive approach

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Abstract

This study examines the nature of different types of English noun phrases with the relator *of* in their structural middle such as *the father of the bride*, *a map of the world*, or *that plonker of a plumber* (*of*-NPs). In response to a strong focus in previous literature on the internal structure of these expressions and the notion of headedness, this study investigates *of*-NPs from a different angle, taking a multi-method approach.

In a theoretical framework embedded in Construction Grammar and Conceptual Blending Theory, *of*-NPs are viewed as constructions consisting of ‘conceptual entities’, one to either side of the relator *of*. These two conceptual entities are put into a meaning relationship with one another, which creates the meaning of the overall expression. This theoretical approach facilitates the inclusion of all types of *of*-NPs (including idiosyncratic ones) within the same framework.

In a corpus approach, this study examines the diversity of English *of*-NPs in written language. It analyses a representative sample of expressions from the British National Corpus and identifies 31 different types of *of*-NP constructions and their frequency within the corpus.

In a cotextual approach, the expressions are studied within their immediate textual environment. Based on a cohesion analysis, this study introduces the concepts of ‘cohesive footprint’ and ‘cohesive landscape’ by the means of which it identifies five textual functions of English *of*-NPs: elaboration, linking, transition, introduction, and mention.

In a cognitive sorting experiment, the *of*-NP constructions found in the corpus dataset are tested against the intuition of other experts and non-experts. This approach discusses the influence of previous knowledge in linguistics on the interpretation of grammatical phenomena, and confirms the relevance of constructional meaning within English *of*-NPs.

This study concludes that grammatical phenomena, such as English *of*-NPs, need to be examined from multiple angles, which inform one another. From such a multi-method approach arises a more profound understanding of the multifaceted nature of a grammatical phenomenon.

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Abbreviations

AdvP	adverb phrase
AJC	BNC tag for comparative adjectives
AJS	BNC tag for superlative adjectives
AJO	BNC tag for general adjectives
BNC	British National Corpus
CLAWS	Constituent Likelihood Automatic Word-tagging System
ConEn	conceptual entity
CRD	BNC tag for cardinal numbers
CxG	Construction Grammar
dd	deictic determiner (Fawcett 2007)
Det ₁ /Det ₂	first or second determiner in an <i>of</i> -NP
DT0	BNC tag for general determiners
fd	fractionative determiner (Fawcett 2007)
Fp	cohesive footprint
Freq	frequency
h	head
IFG	Introduction to Functional Grammar (Halliday)
KPIC	Key Pattern In Context
KWIC	Key Word In Context
L1	first (or native) language of a participant
L2	second (or non-native) language of a participant
MP	modifier phrase
N	noun
N ₁ /N ₂	first or second noun within an <i>of</i> -NP
N.*	a generic BNC tag to include NN0, NN1, NN2 and NP0
Ngp	nominal group
NN0	BNC tag for common nouns, neutral in number
NN1	BNC tag for singular common nouns
NN2	BNC tag for plural common nouns
NP	noun phrase
NP0	BNC tag for proper nouns
Obj	object
od	ordinative determiner (Fawcett 2007)
ORD	BNC tag for ordinal numbers
pd	partitive determiner (Fawcett 2007)
PNI	BNC tag for general pronouns
PNQ	BNC tag for interrogative pronouns
PP	prepositional phrase
PRF	BNC tag for the element <i>of</i>
qd	quantifying determiner (Fawcett 2007)
qid	qualifier-introducing determiner (Fawcett 2007)
rd	representational determiner (Fawcett 2007)
sd	superlative determiner (Fawcett 2007)
SFL	Systemic Functional Linguistics
SKT	sort, kind, type
Subj	subject
td	typic determiner (Fawcett 2007)
tod	totalising determiner (Fawcett 2007)
v	selector <i>of</i> (Fawcett 2007)

1 Introduction

This study presents research on the nature of English noun phrases that contain the relator *of* in the middle, such as *the father of the bride*, *a map of the world*, or *that plonker of a plumber* (for more examples see (1-1) to (1-6) below). The English noun phrase¹ has been studied in great detail by various scholars in the past. A first detailed account of English noun phrase structures was given by Fries (1970) with his tagmemic approach. This was then followed by further discussions such as Quirk et al.'s (1972, 1985) comprehensive, traditional accounts of English grammar, discussions in generative grammar (e.g. Burton-Roberts 1997), accounts in Systemic Functional Grammar (Halliday 1985, 1994; Bloor & Bloor 2004; Fontaine 2013; Halliday & Matthiessen 2014), and others such as Rijkhoff (2004) and Keizer (2007) to name but a few. However, even though there has been such wide-ranging research on the nature of the phenomenon, there is a type of English noun phrase which has since proven to be a tough nut to crack, namely noun phrases that contain the relator *of* in their structural middle, such as the examples given in (1-1) to (1-6) taken from previous literature:

- (1-1) the father of the bride (Radden & Dirven 2007: 159)
- (1-2) a map of the world (Fawcett 2007: 197)
- (1-3) that plonker of a plumber (Keizer 2007: 85)
- (1-4) one of the stallholders (Keizer 2007: 83)
- (1-5) a box of chocolates (Keizer 2007: 109)
- (1-6) a sort of kitchen (Keizer 2007: 152)

¹ The grammatical entity referred to as 'noun phrase' within this study is called differently in other frameworks. Aarts & Aarts (1982), Fries (1998), Rijkhoff (2004), Keizer (2007), Radden & Dirven (2007), and also representatives of generative transformational grammar such as Radford (1988) and Burton-Roberts (1997) use the term 'noun phrase' too. Systemic functional linguists, on the other hand, use the term 'nominal group' to refer to the same phenomenon (see for example Tucker (1998), Bloor & Bloor (2004), Fawcett (2008), Fontaine (2013), or Halliday & Matthiessen (2014)). Furthermore, although these two terms are used predominantly, two further term combinations, namely 'nominal phrase' and 'noun group', are also used from time to time (see, for example, Marit (2005) and Mikheev & Finch (1997) respectively). All these terms are synonymous in nature and could be used interchangeably, even though Halliday & Matthiessen (2014) and Matthiessen, Teruya & Lam (2010) argue that there is an important distinction between groups and phrases. In turn, Fontaine & Schöenthal (forthcoming) offer a thorough discussion of the difference between phrases and groups, and conclude that such a distinction is not necessary. Therefore, following their example, the term 'noun phrase' (henceforth also NP) is used throughout this study.

These expressions all belong to the same grammatical phenomenon of English noun phrases containing the relator *of* as their structural midpoint. While this common denominator marks them all as part of the same grammatical phenomenon, the expressions are also extremely diverse in nature. For example, in addition to the ones given in (1-1) to (1-6)—which contain examples of possession, representation, apposition, selection, quantification and typification² respectively—the phenomenon also includes the large and very productive class of collective nouns such as *a flock of sheep*, *a pride of lions* or *a laughter of hyenas* (see Shulman 2009; Faulkner et al. 2013; Rhodes 2014). Furthermore, due to its extensive variety, the phenomenon is also so flexible as to allow for a great amount of linguistic creativity, as is exemplified by (1-7) and (1-8) below:

(1-7) a crescent-shaped jewel of an island (Austin 1980)

(1-8) *A cow of an awkward pause* mooed (Mitchell 2006: 65, emphasis added)

The noun phrase in (1-7) inspired Austin (1980) to write a whole paper on this particular type of expression, where *an island* is likened to *a crescent-shaped jewel*. Similarly, in (1-8), an expression taken from David Mitchell's (2006) novel *Black Swan Green*, the construction allows *an awkward pause* to be personified as *a cow* that interrupts an awkward conversation at a family dinner. Thus, it is this grammatical phenomenon—English noun phrases with the relator *of* in the middle, in their full diversity and with their great creative potential—that lies at the heart of this study.

To date, these noun phrases have already been subject to a considerable amount of research. Indeed, the individual types of them have been discussed in detail by various scholars. For example, Aarts (1994, 1998) examines the binominal *that plonker of a plumber* expressions given in (1-3) and indeed (1-7) and (1-8) above; Brems (2003, 2010) researches measure and size noun constructions (1-5); Hawkins (1981) discusses possessive constructions (1-1); and Davidse, Brems & De Smedt (2008) look at type noun uses such as example (1-6) above. In addition, there are also a few accounts which examine the phenomenon as a whole: an extensive semantically based collection of these constructions and list of the different types (Francis, Hunston & Manning 1998: 176–199); a discussion of the 'selection principle' that is at work in these expressions (Fawcett 2007); and an elaborate monograph by Keizer (2007),

² See the corpus analysis in Chapter 4 for a more detailed discussion of these different types of the phenomenon.

which draws together the various accounts of these expressions and also offers a cognitive approach. Yet, due to the extensive research on this phenomenon, embedded in various frameworks, the terminology that is used to refer to these expressions is extremely varied. For example, even though Aarts (1994, 1998) and Austin (1980) examine the same type of noun phrase, the former refers to them as ‘binominal noun phrases’ while in the framework of the latter they are called ‘appositive nouns’. In other literature, noun phrases with the relator *of* in the middle have further been referred to as ‘Ngp of Ngp’ or ‘NP of NP’ patterns (Prakasam 1996; Traugott 2008a), ‘N of NP’ patterns (Hawkins 1981), or ‘N of N’ patterns (Alexiadou, Haegeman & Stavrou 2007). Therefore, in order to avoid varied and confusing terminology, all types of noun phrases with the relator *of* in the middle are henceforth referred to as ‘*of*-NPs’.

Despite all the above-mentioned research on *of*-NPs in place, there is still considerable disagreement regarding their structure, and many other aspects of their multifaceted nature remain untouched. As is discussed in more detail in Section 2.2, most literature on English *of*-NPs focuses on the notion of headedness. In other words, it examines whether, in the various types of *of*-NPs, the structural or semantic core noun—the ‘head’ noun—is located to the left or to the right of the relator *of*, i.e. whether the *of*-NP is left-headed or right-headed. While this discussion is interesting from a structural point of view, it ignores many other aspects of the expressions’ complex nature. Some accounts do discuss other features of the grammatical phenomenon, yet they still do so in the light of headedness, or in relation with other, related phenomena. For example, Traugott (2008a, 2008b) examines the grammaticalisation process in measure *of*-NPs such as *a lot of X*. She concludes that these expressions have entered the language as left-headed expressions, but are now in various stages of grammaticalisation on their way to being right-headed (see Traugott 2008b: 227). Further, Hawkins (1981) compares possessive *of*-NPs such as *the father of the bride* (1-1) to their equivalent genitive cluster, i.e. *the bride’s father*, and Keizer (2004) investigates the distinction between postnominal modifiers and adjuncts, which includes the phenomenon of *of*-NPs. Both of these studies thus look at *of*-NPs within other, broader phenomena—possessives and postnominals—but only include one type of *of*-NP in isolation, and the approach in both cases is still based on headedness. Therefore, while the notion of headedness and the individual approaches to *of*-NPs to date shall be discussed in more detail in Sections 2.1 and 2.2, the picture

emerging is that most research undertaken has been rather one-sided, with a very strong bias towards identifying the nominal head.

In an attempt to paint a larger picture and capture the multifaceted nature of English *of*-NPs, this study takes a different approach to these expressions, exploring aspects that have so far been ignored. Thus, in the following, Section 1.1 defines *of*-NPs in more detail, drawing the boundaries of which expressions are included as part of the phenomenon and which ones are not. Section 1.2 identifies three different, underrepresented aspects of *of*-NPs. It is the aim of this thesis to bring these aspects together in a multi-method study. This aim is described in more detail in Section 1.3, followed by the presentation of the multi-method approach in Section 1.4 and an outline to this study in Section 1.5.

1.1 A definition of English *of*-NPs

Before moving on to establishing the research aims of this study, it is necessary to first offer a definition of which expressions are included or excluded in the phenomenon of *of*-NPs. So far, *of*-NPs have been loosely defined as any noun phrase that contains the relator *of* in the middle. There are, however, some exceptions where *of* appears in a noun phrase, but does not constitute an *of*-NP. Consider the invented examples in (1-9) to (1-11):

(1-9) the dog that was barking at the back of the house

(1-10) the man of whom I had heard some gossip

(1-11) the man whom I had heard some gossip of

The noun phrase in (1-9) consists of the head noun *dog* with a relative clause as postnominal modifier, which in turn contains the relator *of*. Even though *of* is part of the whole noun phrase, *the dog that was barking at the back of the house* does not constitute an *of*-NP as a whole. Instead, *of* is part of a smaller *of*-NP, namely *the back of the house*, which is embedded in a relative clause and thus part of the whole noun phrase of (1-9). In (1-10), on the other hand, *of* is part of the verbal construction *to hear something of someone* but has been fronted to a preverbal position together with the relative pronoun *whom*. Alternatively, it could also be left dangling at the end of the noun phrase as given in (1-11). Thus, even though (1-9), (1-10) and indeed (1-11) contain the element *of*, they are not examples of *of*-NPs because *of* is either part of a

smaller, embedded *of*-NP, or it fulfils a different grammatical function as part of an embedded, verbal construction.

Furthermore, while the above expressions are not part of the research at hand,³ this study includes some other expressions that require some further explanation. As is discussed in more detail in Chapter 3, all *of*-NPs consist of two entities—one preceding and one following the relator *of*—and as will become clear through the *of*-NP dataset presented in Chapter 4, these entities are mostly clearly nominal. See the sample *of*-NPs in (1-12) to (1-16) taken from the corpus dataset (see Chapter 4):⁴

(1-12) the richness of the subject <1831>

(1-13) a race of gentlemen <1533>

(1-14) a total of 47 people <329>

(1-15) the outbreak of war <1878>

(1-16) one of the departments in the Store <295>

In these examples, both the element before and after the relator *of* consist of a noun at their structural centre, and are thus nominal. A special case is example (1-16) which consists of a pronominal (rather than nominal) *one* before the relator *of*. Due to their clear nominality, expressions of this kind are straightforward to recognise as *of*-NPs, and they are also included in most of the literature. However, this study extends to expressions which contain elements before or after the relator *of* that do not consist of a straightforward nominal element. Consider the examples given in (1-17) to (1-21), which have also been taken from the corpus dataset (Chapter 4):

(1-17) too much of a softie <191>

(1-18) four of the six patients <826>

(1-19) his irrational idea of the Rev Jesse Jackson as Vice-President <1390>

(1-20) determination of who can claim damages for nervous shock <706>

(1-21) the sounds of a dustbin lid being replaced <1430>

The first two expressions, (1-17) and (1-18), contain a non-nominal element before the relator *of*, namely *too much* and *four*. These two elements refer to abstract concepts of quantity rather than concrete concepts of things and objects and are thus not nominal.

³ Note that the *of*-NP in (1-9), *the back of the house*, would be included in the present analysis, but the entire noun phrase of (1-9) would not be considered an *of*-NP in its own right.

⁴ The chevrons < > behind each of these examples refer to the concordance line number of the corpus dataset. This notation is introduced in more detail in Section 4.1.2.

However, the overall expression is still considered an *of*-NP, since it is a noun phrase with the relator *of* in the middle. The difference is that the left-ward slot which is usually occupied by a nominal element is exploited by a quantifying element instead. Similarly, the expressions in (1-19), (1-20) and (1-21) contain a postpositioned element which refers to a situation or an action rather than an object. In (1-19), it refers to a state of being, namely that of the Rev Jesse Jackson being Vice-President. The element *the Rev Jesse Jackson as Vice-President* is thus more clausal rather than nominal in nature, as it expresses the clausal relationship *the Rev Jesse Jackson is Vice-President*. In (1-20), this clausal nature is overtly expressed by the element being a subordinate clause *who can claim damages for nervous shock*, while in (1-21) the element *a dustbin lid being replaced* could be interpreted as nominal (*a dustbin lid which is being replaced*) or as clausal (*a dustbin lid is being replaced*). This proximity between clause and noun phrase is also identified by Fontaine (2015) who, drawing on examples from Halliday & Matthiessen (2014: 198) reproduced in (1-22) to (1-24) below (emphases in original), shows that the clause can also take the place of a noun phrase in other syntactic positions such as, for example, Subject and Theme in a clause.

(1-22) To argue with the captain was asking for trouble.

(1-23) Ignoring the problem won't make it go away.

(1-24) That all this wealth might some day be hers had simply never occurred to her.

Therefore, expressions such as the ones in (1-19) to (1-21) above, and indeed the ones in (1-17) and (1-18), are also considered *of*-NPs. These special cases of *of*-NPs are revisited in Chapter 3 to show how they fit in with the theoretical framework which the subsequent methodologies and data analyses are built on. Beforehand, however, now that it has been established what is considered an *of*-NP and what is not, Section 1.2 introduces the gaps in the literature on *of*-NPs, which then lead to the main research aims in Section 1.3.

1.2 Untouched aspects of *of*-NPs: The gaps in the literature

The nature of any grammatical phenomenon is multifaceted, with many different, complementary aspects. These aspects range from structural or semantic features, the phenomenon's behaviour in context, its frequency of occurrence in different text types, to cognitive aspects of production and comprehension. As mentioned above, in the

case of *of*-NPs, the one aspect that has been focused on most is the notion of headedness. While this notion is discussed in more detail in Chapter 2, this study examines *of*-NPs from a different perspective. Based on a more semantically oriented framework, it examines underrepresented aspects of *of*-NPs, thus further exploring their multifaceted nature. These aspects are concerned with the phenomenon's diversity and idiosyncrasy therein, with its context, and with non-experts' intuitive interpretation of these expressions. Each of these aspects identifies a gap in the literature on English *of*-NPs to date, which are addressed in the following three Sections 1.2.1 to 1.2.3, leading to the main research aims of this study in Section 1.3.

1.2.1 The diversity of *of*-NPs and the problem with idiosyncrasy

The first issue concerning previous discussions of *of*-NPs relates to the fact that this grammatical phenomenon is so varied in nature. There are so many different types of *of*-NPs, which all have slightly (or even completely) different features, that it is rather difficult to account for all of them within one study. An all-encompassing classification of *of*-NPs would require attention to every single instance of them and lead to a taxonomy branching off into countless idiosyncratic examples. This challenge posed by the diversity and idiosyncrasy of *of*-NPs has been recognised by other scholars as well, and indeed, most studies have focused on only one or a few core types of *of*-NPs each, such as the examples given above. What is more, in her monograph on *of*-NPs, Keizer (2007) brings all of these different types together, but still discusses them in individual chapters as individual phenomena, as well as ignoring other, more peripheral examples. In direct relation to the idiosyncratic nature of many *of*-NPs, she addresses this issue as follows:

[I]t will be clear that since different, sometimes contradictory, factors are at work, expressions may exhibit the features of a particular type of construction to various degrees. Since representing every possible degree of deviation from the category is both undesirable and impossible, the only option seems to be to base classification on the best examples of a category, and to accept that any representations proposed are idealizations, meant to make sense of the incredible heterogeneity of 'linguistic reality'. (Keizer 2007: 186)

Keizer here acknowledges the difficulty of representing "every possible degree of deviation" of an *of*-NP. In addition, she states that such a representation would be "undesirable", based on the fact that it would be unmanageable and vastly

incomprehensible. Therefore, Keizer proposes that the classification of *of*-NPs should be restricted to core examples. This implies that peripheral examples would then have to be forced into a category of *of*-NPs which best represents their overall nature but ignores their idiosyncratic aspects. This implication has been made explicit before by Napoli's (1989) argument for analysing the element *of a chairman* within *that crook of a chairman* as a PP. She bases this analysis on her intent to keep grammatical elements as unambiguous as possible: "In the interest of non-proliferation of homophonous items that have similar distributions [...], I propose that *of* [...] is [a] P[reposition]" (Napoli 1989: 212, emphasis in original). A similar stance is taken by Aarts (1994: 13) when he argues for a 'normalised' analysis of *of*-NPs. In a later paper, he even goes as far as to say that a simplified analysis of a diverse grammatical phenomenon is preferable "on general grounds of elegance and economy" since it "makes the task of explaining language acquisition easier" (Aarts 1998: 127). Hence, there appears to be a tendency to ignore idiosyncratic examples of a linguistic phenomenon in favour of a more manageable and less problematic representation, avoiding the "proliferation" of grammatical entities and thus making grammatical analysis easier.

Further support of this view is given by Chomsky (1995: 20), who states that it is necessary "to focus on the core system, putting aside phenomena that result from historical accident, dialect mixture, personal idiosyncrasies, and the like". Culicover & Jackendoff (2005: 25–37), however, note that these idiosyncratic phenomena are very numerous and that by "putting them aside" a large part of the language is being ignored (see Hoffmann & Trousdale 2013a: 3).

Thus, this view on grammatical analysis disregards the fascinating diversity of language, ignoring numerous exceptional but interesting instances of a phenomenon. Language is, by no means, a simple tool. On the contrary, it is a complex, ever-changing entity, whose 'rules' are vastly outnumbered by its exceptions. Therefore, if language is complex, why should its representation be simple? If an analysis of a linguistic phenomenon is to be as close a representation of its 'true' nature as possible, we need a grammatical framework which acknowledges the phenomenon's diversity and does not shy away from dealing with idiosyncratic examples. A similar argument is made by Morley (2001: 351) in response to Fawcett's (2000b, 2000c) proposal for a more simplistic representation of the English verbal group:

[L]anguage is a rich, dynamic organism and as such will manifest complexities of relationships. When these are encountered, they should not be simplified out (of existence) but need to be analysed in as simple a way as possible which records the nature of the complexity.

Hence, while it is, indeed, impossible to account for every single exceptional instance of *of*-NPs—simply because that would require the inclusion of every individual occurrence of *of*-NPs—an ideal representation of their grammar still needs to build on the nature of both core *and* idiosyncratic examples. The framework used for such a representation needs to be built on grammatical categories that are flexible enough as to allow for ever further idiosyncrasies to be incorporated or accounted for. Therefore, in order to examine the phenomenon in its whole complexity, the data used for analysis needs to be representative of all the different types of *of*-NPs as well as their frequency. A discussion of *of*-NPs needs to include the different core *and* idiosyncratic examples of *of*-NPs individually, but also needs to address how these different types relate to one another, i.e. how they all form part of the overall phenomenon that are *of*-NPs. As is discussed in Sections 1.4.2 and 1.5 below, the study at hand includes a corpus analysis of English *of*-NPs to address this issue (see Chapter 4).

1.2.2 Examining *of*-NPs out of context

The second issue concerning *of*-NPs that is addressed here is the nature of their context—their ‘cotext’, to be precise⁵—and the expressions’ textual functions therein. Indeed, in the discussions on *of*-NPs’ left- or right-headedness that have been offered by various scholars in the past, the notion of their textual environment, their cotext, has been neglected. Most of the time, *of*-NPs have been analysed out of context, solely looking at their internal structure. In fact, the only inclusion of the immediate cotext of *of*-NPs again aims at identifying the expressions’ head by the means of subject-verb agreement. Consider examples (1-25) and (1-26) taken from Keizer (2007: 120, emphases in original):

⁵ For a definition of the difference between ‘context’ and ‘cotext’, see Section 5.1.

- (1-25) *The herd of large African elephants was* larger than I thought.
(1-26) *The herd of large African elephants were* stampeding toward us.

In example (1-25), the main verb *was* is in verbal agreement with the *of*-NP's singular and leftward noun *herd*, while in example (1-26), *were* agrees with the plural, rightward noun *elephants*. Since subject-verb agreement is taken as a means of identifying the head within a noun phrase (Zwicky 1984: 8–9; also see Section 2.1.2), these two examples illustrate that *of*-NPs can be ambivalent as regards the identity of the head noun. Apart from these rare instances, however, the nature of an *of*-NP's cotext and thus their textual function(s), i.e. their role within their surrounding text, the cotext they are embedded in, has so far been left untouched. Sections 1.4.2 and 1.5 below explain how this lack of context is addressed by the present study (see Chapter 5).

1.2.3 The observer's bias

Thirdly, a further issue that has so far been ignored by past studies on English *of*-NPs is the interpretation of such expressions by non-experts, i.e. by non-linguists. Dąbrowska (2010: 2) shows “that judgments [on a grammatical phenomenon] can be influenced by the observer's beliefs and expectations”. For example, a syntactician's interpretation of the behaviour of a certain grammatical phenomenon such as *of*-NPs may rely entirely on the syntactic theory they are most accustomed with. This reliance on the most well-known theory explains previous research's focus on the notion of headedness which has been given a lot of attention within the theory of syntax (see for example Corbett, Fraser & McGlashan 1993). While this study—for reasons explained in detail in Section 2.1.2—counteracts this focus on headedness by taking a new, semantic approach to *of*-NPs (see Chapter 3), further measures against the observer's bias are needed. After a thorough analysis of a phenomenon by the linguist, the resulting insights can be tested against the intuition of non-linguists, in order to examine whether their interpretation of the phenomenon matches the one of the expert, or whether a reinterpretation of the data is necessary.

What is more, Dąbrowska (2010: 1) also addresses the problem of individual judgments: “Traditionally linguists have relied on their own intuitions, or those of a few colleagues [...]. This, however, is problematic, since individual judgments are often unreliable”. Hence, in addition to running tests on a grammatical phenomenon with non-linguists, it is vital to do so with a large number of participants in order to

best avoid the unreliability of individual judgments. This study takes a first step towards the inclusion of non-experts' intuition as outlined in Section 1.4.2 below (see Chapter 6).

Finally, in answer to Dąbrowska's (2010) claim that a linguist's analysis can be influenced by the linguistic theory they are most accustomed to, this study looks at the phenomenon of *of*-NPs on a clean slate, examining them from a new, semantic perspective (Chapter 3). Due to this premise, the research at hand is not driven by hypotheses—which would be based on previous assumptions—but rather by research aims as presented in Section 1.3.

1.3 The research aims of this study

The previous Sections 1.2.1 to 1.2.3 briefly introduced three aspects of *of*-NPs which are in need of further research, and which are thus addressed in more detail within this study. These three aspects—the phenomenon's diversity, its textual function(s), and non-linguists' interpretation of it—are all very different aspects which reflect the multifaceted nature of the phenomenon. Examining so many different features of one grammatical phenomenon in one study is rather uncommon. Indeed, as has been mentioned before and as will become more evident in the review of previous literature in Chapter 2, research on *of*-NPs has so far focused on the structural nature of these expressions only. Such research has predominantly been theoretical. However, grammatical phenomena such as *of*-NPs are more than just structural in nature. Next to their form, there is a multitude of other facets that can be considered, such as their semantics, their frequency of occurrence, their function(s), their context, and how they are produced and perceived from a cognitive perspective. It is thus argued that, in order to truly understand the nature of a grammatical phenomenon, all of these aspects need to be taken into consideration. In this sense, the phenomenon can be likened to an unattended flock of sheep. It is quite hard to grasp and control if attacked from one side only. Thus, much like a sheepdog needs to continuously circle his flock of sheep and bark at them from different directions in order to keep them contained, a grammarian needs to look at the phenomenon of interest from various angles too—i.e. analysing a number of its different aspects rather than just focusing on one (e.g. the phenomenon's structure)—in order to fully understand its nature. Note, however, that

due to limitations in the scope of this thesis, only *of*-NPs from written language are examined. The phenomenon's behaviour in spoken data is left for future research.

It is this study's overarching research aim to capture this multifaceted nature of written English *of*-NPs more effectively than previously. This requires different approaches, simultaneously targeting the individual facets. Thus, rather than only focusing on one aspect of the phenomenon's nature, I take a multi-method approach in order to examine and combine these different aspects. These approaches can then be used to inform one another, in order to paint an overall, more comprehensive picture of the phenomenon at hand. As is outlined in more detail in Sections 1.4.2 and 1.5 below, each of these approaches are presented in individual chapters. Each of these chapters, Chapter 3, 4, 5 and 6, identify more detailed research aims tailored to each approach's purpose. These aims are as follows:

- to design and present a theoretical framework with which it is possible to integrate the full diversity of English *of*-NPs as well as their different features explored in this study (Chapter 3).
- to examine and describe the phenomenon's diversity, gathering and analysing core as well as idiosyncratic examples of *of*-NPs within the same theoretical framework, thus addressing the issue of diversity and idiosyncrasy (Chapter 4).
- to research the expressions within their context, investigating what their textual function(s) are and whether the context can inform us on other aspects of the phenomenon's nature, which counteracts the current lack of research examining *of*-NPs in context (Chapter 5).
- to take a step away from the researcher's own, individual perspective and to test whether other linguists and non-experts reproduce the same results as the ones found in the previous chapters, thus addressing Dąbrowska's (2010) observer's bias (Chapter 6).

These diverse aims are then merged again in Chapter 7, readressing the main research aim of representing the multifaceted nature of English *of*-NPs, and discussing the benefits of a multi-method approach to the analysis of grammatical phenomena in general.

1.4 Taking a new multi-method approach to English *of*-NPs

The research aims introduced in Section 1.3 above are each addressed by different approaches. Due to this multi-methodological nature of the research, the thesis at hand takes a non-canonical structure. Since each chapter is singularly devoted to one part of the multi-method approach, each chapter consists of its own brief literature review, methodology, data analysis and discussion section. As stated above, each chapter also presents more detailed research aims targeting specific aspects of the nature of English *of*-NPs.

The individual approaches are united by this study's 'extended data cycle'. In the following, Section 1.4.1 first introduces de Mönnink's (2000) data cycle on which this study's multi-method approach is based. Section 1.4.2, then, presents the current research's extended data cycle. As will become evident (see Figure 1-2), each remaining chapter then corresponds to one point in this cycle. The order of these chapters is presented in Section 1.5 which offers an outline to this thesis.

1.4.1 De Mönnink's data cycle

A multi-method approach to the description of grammatical phenomena has previously been proposed by de Mönnink (2000). Her article discusses the methodology needed in order to examine the grammatical acceptability of constituents' mobility within the English noun phrase. While her argument solely focuses on the structural potential of the grammatical phenomenon in question, her notion of the 'data cycle' is useful nonetheless. Due to the inherent size limitations of a corpus, de Mönnink (2000: 1–2) argues, it is necessary to supplement corpus data with further data gained from elicitation experiments. She claims that corpus data is not enough on its own because the infrequency or "non-occurrence of a structure in the corpus says nothing about its grammaticality or acceptability in language use" (de Mönnink 2000: 2). It only becomes possible to make a claim about the acceptability of these expressions when considering the intuition of L1 speakers. Therefore, in de Mönnink's data cycle, elicitation experiments (for specific examples, see de Mönnink 2000: 7–9) are used to inform on the acceptability of structures found within language corpora. As a consequence, de Mönnink (2000: 11–12) proposes a 'data cycle' (see Figure 1-1) where both corpus and intuitive data are used to inform one another and the hypotheses of the research project in question.

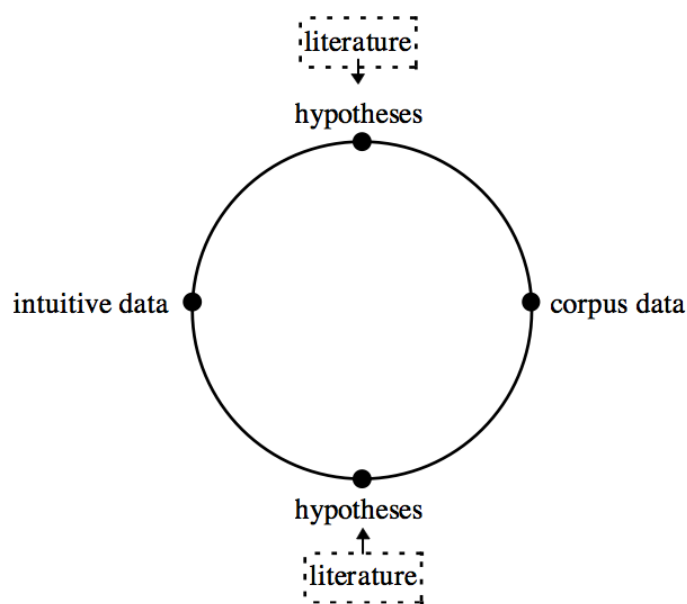


Figure 1-1: The data cycle (taken from de Mönnink 2000: 12)

Within this data cycle, the results from both corpus and intuitive data are used to revise the research aims or hypotheses and inform one another. De Mönnink (2000: 11–12) states:

A descriptive study does not necessarily have to start with a corpus-based study. It can start and end anywhere on the data cycle. However, for a sound descriptive study the whole round has to be completed at least once. [...] Ideally, the process should only stop when all (remaining) hypotheses have been either accepted or rejected.

For a study in search of the acceptability and structural potential of a grammatical phenomenon, such as de Mönnink’s (2000) examination of the mobility of constituents within the English noun phrase, this dual data cycle may be an apt approach. However, in order to gain more profound knowledge on all the issues addressed in Sections 1.2.1 to 1.2.3 above, I propose an extended version of the data cycle, which is presented in detail in Section 1.4.2.

1.4.2 The extended data cycle

The extended data cycle takes not two but four different approaches to the phenomenon of *of*-NPs, namely a theoretical, a corpus, a cotextual, and a cognitive approach. Figure 1-2 illustrates these four approaches in relation to each other within the extended data cycle.

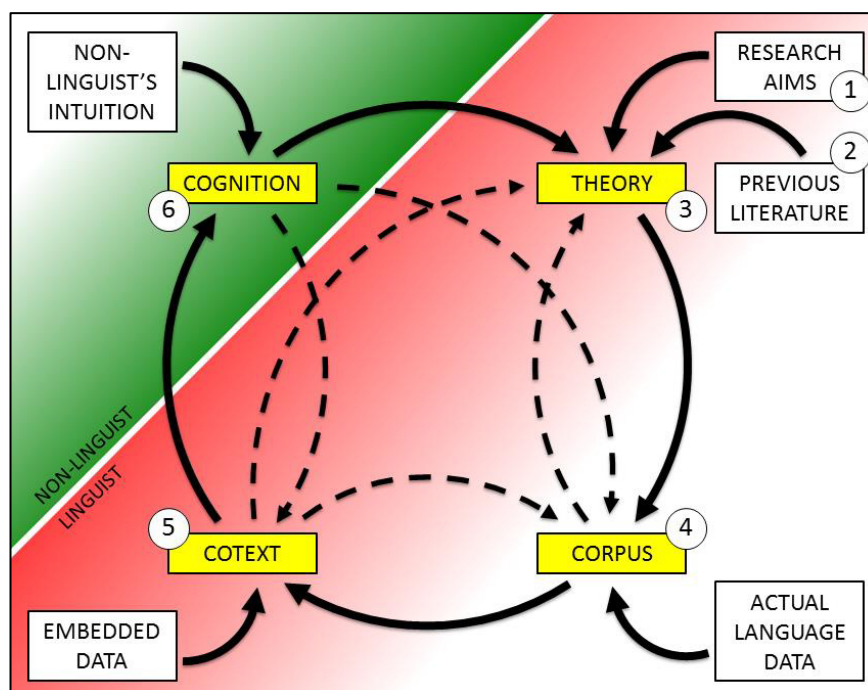


Figure 1-2: The extended data cycle relating this study's four approaches

The entry point into the extended data cycle as indicated by Step 1 and Step 2 in Figure 1-2 (the numbers in the figure correspond to the chapter numbers of this thesis) is presented by the research aims of the current chapter, and by previous research on the phenomenon of *of*-NPs. After reviewing this previous literature, the first step within the extended data cycle—Step 3 in Figure 1-2 above—is the theoretical approach. It addresses the issues raised in Section 1.2.1 and develops a theoretical framework which can deal with the diversity of *of*-NPs and incorporates both core and idiosyncratic examples of the phenomenon. Furthermore, it constitutes the foundation on which the remaining approaches are built.

The second approach in the cycle (Step 4 in Figure 1-2) looks at the phenomenon of *of*-NPs within a language corpus. Thus, it takes into account real language data that has been produced by language users for some purpose other than linguistic analysis. Sinclair (1992) expresses the need to move away from speculation and test a theory's accuracy with real language data retrieved from language corpora. In addition to this benefit of objective real language data, de Mönnink (2000: 1) identifies further advantages of corpora: Firstly, they give “insight into the distribution of linguistic features across, for example, text types or communicative situations”. More importantly, however, they give access to the frequency of particular instances of a phenomenon, allowing the researcher to study both core and peripheral examples. Hence, this approach also addresses the issues of idiosyncrasy as well as the diversity

of *of*-NPs as addressed in Section 1.2.1. Furthermore, as de Mönnink (2000: 1) points out, research based on corpus data is verifiable, because the corpora are also available to other researchers, which “is an important requirement for a scientific approach to linguistics” (de Mönnink 2000: 1; also see Eddington 2008: 16).

However, looking at a long list of instances of *of*-NPs is not enough to reach a better understanding of the nature of the phenomenon. Even though they are instances of real language use, they are still taken out of context, whereby a large part of their nature is being ignored. Examining the internal structure and semantics of these expressions in isolation is akin to only looking at the tip of an iceberg, while the rest of the ice construction remains hidden below the surface: How does the expression relate to the rest of the text?; How is it embedded within its textual environment?; What are its textual function(s)?; In which situation was the text produced and for what purpose?; What type of audience is addressed by the text?; What mood was the author in when they wrote it?; etc. While some of these aspects of the expression’s context are not available to the researcher, fortunately, as pointed out by de Mönnink (2000: 1), the corpus approach allows us to retrieve one major aspect: the expression’s immediate textual environment—its cotext—which takes us to Step 5 in Figure 1-2 above. Indeed, the cotextual approach examines *of*-NPs within their immediate textual environment and identifies their textual functions. Thus, it addresses the underrepresentation of context in research on *of*-NPs to date, as identified in Section 1.2.2 above.

Finally, the research conducted within the first three approaches—Step 3 to 5—singularly relies on the judgments of one individual linguist. In the extended data cycle in Figure 1-2 above, this is marked by the red area, in which the theoretical, the corpus, and the cotextual approach are all located. The fourth and final approach of this study, the cognitive approach—marked by Step 6 in Figure 1-2—thus moves away from the red area and into the green zone of Figure 1-2, which deals with the intuition of other individuals about the nature of *of*-NPs, including other experts but also non-linguists. Specifically, by the means of an online sorting experiment, this approach examines whether the researcher’s corpus categorisation of the different types of *of*-NPs matches non-linguists’ intuitions about these expressions, or whether the categories need to be reassessed, thus re-entering the data cycle. Hence, this approach addresses Dąbrowska’s (2010) concerns with the observer’s bias as introduced in Section 1.2.3.

Throughout this thesis, it may, at times, appear as if the four different approaches were conducted one after another and only when one of them was completed was another started. However, this is not at all the case. Since this study aims at examining the diversity and multifaceted nature of *of*-NPs on a clean slate, the research started with a corpus analysis, exploring the nature of the phenomenon in real language data. The other three approaches then emerged out of these results. Thereafter, for most of the time, the four approaches were conducted simultaneously. What is more, based on results from one approach, it was often necessary to go back and reassess what had been found in one of the other approaches. In other words, the four approaches actively influenced and informed one another, whereby the multifaceted nature of the *of*-NPs became apparent. This interaction between the four approaches is represented in Figure 1-2 by the dashed arrows across the data cycle. For reasons of ease of presentation and reading flow, however, the four approaches are presented one after another as if they took place in a chronological order. This order is presented in the outline to this thesis in the following section.

1.5 An outline to this thesis

In Figure 1-2, each step in the extended data cycle is marked by a number from 1 to 7. These numbers link up with the structure of this thesis, as every single step represents an individual chapter. Step 1, which concerns the research aims, has been addressed by the current chapter. Subsequently, Chapter 2 reviews the research on *of*-NPs to date. Specifically, it addresses the problematic nature of the notion of headedness and presents the decision to background this notion for the purposes of this study. Furthermore, it takes a closer look at the core types of *of*-NPs that have been discussed previously by other scholars. These include quantifier *of*-NPs, partitive *of*-NPs, so-called SKT *of*-NPs, and appraisal *of*-NPs. In addition, it reviews three more comprehensive approaches to these expressions.

In opposition to the structural approaches to *of*-NPs taken so far, with their strong focus on headedness, Chapter 3 then introduces a semantic approach to *of*-NPs. Linking in with Conceptual Blending Theory and the framework of Construction Grammar, it presents the idea that each *of*-NP consists of three so-called conceptual entities. It is the framework of this new theoretical approach to *of*-NPs in which the results of the subsequent approaches are embedded and presented. Furthermore, it is

important to note that while the theoretical approach is presented first here, it actually arose from observations made in the corpus analysis presented in Chapter 4. Indeed, the corpus data helped identify the common semantic denominator of all English *of*-NPs, i.e. the three conceptual entities, and thus offered the foundation for Chapter 3's theoretical framework with which all types of *of*-NPs, including both core and idiosyncratic examples, can be accounted for.

Thus, Chapter 4 presents the corpus approach taken to the phenomenon of *of*-NPs. It introduces the representative dataset of 2,037 *of*-NPs that have been gathered from the British National Corpus (BNC) for the purposes of this study. In a corpus analysis, Chapter 4 then introduces the different types of *of*-NPs that have been identified within the dataset by the means of manual categorisation, including core examples as well as more idiosyncratic ones, and their frequency of occurrence. The categories thus identified are based on the semantic approach presented in the preceding Chapter 3. Hence, this part of the study addresses the issue of idiosyncrasy identified in Section 1.2.1 above by including peripheral examples of *of*-NPs in the description of the overall phenomenon. Furthermore, it illustrates how the semantic approach of Chapter 3 allows us to discuss the phenomenon of *of*-NPs by including all its different types without having to exclude any idiosyncratic instances of its varied nature.

In Chapter 5, this study analyses 199 (i.e. 10%) of the *of*-NPs looked at in Chapter 4 within their immediate cotext. Specifically, these *of*-NPs are examined by the means of a cohesion analysis in order to investigate their textual function(s). Indeed, by the means of two novel cohesive concepts—the 'cohesive footprint' and 'cohesive landscape'—Chapter 5 identifies five different textual functions of English *of*-NPs. Furthermore, it presents a first analysis towards an understanding of whether there is a correlation between any of these five functions and the different types of *of*-NPs, as well as demonstrating how the constructional meaning of an *of*-NP can be cohesively tied to its cotext. Thus, by these means, Chapter 5 takes a first step towards filling the gap in research on *of*-NPs within context, as identified in Section 1.2.2 above.

Chapter 6, then, presents a brief cognitive study on English *of*-NPs, in order to address Dąbrowska's (2010) observer's bias addressed in Section 1.2.3 above. Based on a sorting experiment previously conducted by Bencini & Goldberg (2000), 174 participants in an online survey were asked to sort *of*-NPs into categories based on

shared meaning, in order to see whether their categories would match the ones identified by the researcher. As a result, Chapter 6 presents the *of*-NP sorting strategies of both experts and non-experts and tests the corpus results presented in Chapter 4. Furthermore, it addresses the influence of pre-existing linguistic knowledge on the interpretation and categorisation of English *of*-NPs.

Finally, Chapter 7 offers a conclusion to this thesis. It illustrates how the four approaches of the extended data cycle's multi-method approach have filled the gaps in previous literature and have each presented one aspect of the nature of English *of*-NPs. In addition, it relates the four approaches back to the main research aim of this study and shows how in combination they facilitated capturing the multifaceted nature of English *of*-NPs. Furthermore, it discusses how this study's results have emerged organically from all four approaches simultaneously, even though they are presented separately in individual chapters. As a result, it offers a discussion on how the multi-method approach of the extended data cycle has helped reach a better understanding of the multifaceted nature of English *of*-NPs and the different categories thereof. Keeping this benefit in mind, Chapter 7 also presents the limitations of such a multi-method approach and outlines the vast research that can still be undertaken. On the one hand, English *of*-NPs—as well as their cousins in other languages—need to be examined from further, different angles, and the approaches developed within this study can be conducted on a bigger scale. On the other hand, this study presents a novel multi-method approach to the study of grammar which can be applied to phenomena other than English *of*-NPs.

2 Previous accounts of *of*-NPs and the notion of headedness

As introduced in Chapter 1, the conundrum of the internal structure of English *of*-NPs has been discussed in the literature before and many different accounts have been offered to tackle the problem. Indeed, there are numerous studies discussing the nature of various types of *of*-NPs in detail, as well as a few collective works examining a broader range of the phenomenon. Most of these accounts are, however, centred on the notion of headedness, which poses a problem in the structural analysis of *of*-NPs. This current chapter discusses the problematic nature of the concept of headedness in more detail, and it introduces previous accounts and descriptions of *of*-NPs, the majority of which are all concerned with the notion of headedness. Consequently, it is the aim of this chapter to explain why this study does not adopt the same approach as previous literature and why it moves away from the concept of headedness. Indeed, this chapter leads to this study's alternative theoretical foundation, as presented in Chapter 3. This theoretical framework (embedded in the fields of Construction Grammar and Conceptual Blending Theory) then allows for the inclusion of both core and idiosyncratic examples as well as other aspects of the phenomenon.

Thus, for the purpose of the current chapter, the notion of head is introduced in Section 2.1.1, which, as identified in Chapter 1, constitutes the central element around which most discussions of *of*-NPs have revolved in the past. Subsequently, Section 2.1.2 illustrates why this concept is problematic in relation to *of*-NPs by looking at various criteria with which the head of a noun phrase can be identified. Section 2.2, then, introduces various previous studies on *of*-NPs. The first section, Section 2.2.1, takes a look at numerous brief mentions of *of*-NPs as dispersed through the literature in many introductions and comprehensive discussions of English grammar. Subsequently, Sections 2.2.2 to 2.2.5 introduce the more in-depth discussions of quantifier *of*-NPs, partitive *of*-NPs, SKT *of*-NPs, as well as appraisal *of*-NPs, which constitute the four most prominent types of *of*-NPs discussed in the literature. Section 2.2.6, then, presents in more detail three influential studies that offer different discussions of the overall phenomenon of *of*-NPs, namely Fawcett's (2007) selection principle, Francis et al.'s (1998) list of 'N *of* N' patterns, and Keizer's (2007) comprehensive monograph on the phenomenon. In addition, no discussion of *of*-NPs

is complete without a look at the phenomenon's node, the central element *of*, which is provided in Section 2.3. Finally, Section 2.4 offers a summary of the problematic nature of *of*-NPs in connection with headedness and leads to the motivation for this study to explore these expressions from another, semantically oriented point of view.

2.1 The problem of headedness in English *of*-NPs

In the past, the structure of the English noun phrase has been examined within many different frameworks (see for example Burton-Roberts (1997) or Carnie (2007)⁶ for a discussion of noun phrases within generative syntax; Fawcett (2000a), Fontaine (2013) and Halliday & Matthiessen (2004, 2014) for a systemic functional discussion; or Radden & Dirven (2007) for a structural and functional account from a cognitive perspective). In general, however, the structure of the English noun phrase can be summarised in Bloor & Bloor's (2004: 31) words as a phrase "with a noun [...] as its Head, and that noun may be modified, but it does not have to be modified in order to constitute a group in this technical sense". In other words, a noun phrase may indeed consist of one noun only, which is the so-called 'head' of the phrase, but it is often joined by other elements to create a more elaborate expression. It is this notion of 'head', this central noun of a noun phrase, which is examined in more detail in the following. The validity of the notion of 'head' has been scrutinised in the past and many problem cases have been discussed, including headedness within English *of*-NPs.⁷ Section 2.1.1 thus first introduces the basic notion of 'head'. Section 2.1.2 then continues to introduce more specific features attributed to the head of a noun phrase, mainly following Zwicky (1984, 1993), but at the same time illustrates how these features are problematic, particularly in relation with English *of*-NPs.

2.1.1 The basic notion of 'head'

The 'head' of a noun phrase can be said to be its most important element. Various scholars have taken to define the notion of 'head', and overall have addressed two different aspects of the concept: its syntactic and its semantic role. The former is addressed by more generatively oriented grammarians. Burton-Roberts (1997: 39–40),

⁶ Note that Carnie (2007) is a supporter of the 'determiner phrase' (DP). In other words, rather than nouns, he analyses determiners to be the head element of a noun phrase (i.e. determiner phrase). For reasons of scope, this debate is here not examined any further. However, for a discussion of whether or not determiners should be considered the central element, see Hudson (2004).

⁷ Another example of such a problem case would be expressions such as *the rich* as discussed in Tucker (2015).

for example, states that the head is “the element that is modified and forms the essential centre of the [noun] phrase”. This view is supported by Quirk et al. (1985: 1238) with their proposition that the head is the element “around which [...] the other constituents cluster”, or by Jespersen (1924: 96), who postulates that “[i]n any composite denomination of a thing or person [...], we always find that there is one word of supreme importance to which the others are joined as subordinates”. Hence, the syntactic aspect of the nominal head is that it forms the structural anchor point to which all other elements of the NP are ultimately hooked.

The semantic aspect of the head in a noun phrase, on the other hand, circulates around the idea that nouns “[evoke] a multi-dimensional image” (Wierzbicka 1988: 484). Since, in most cases, the head is realised by a noun,⁸ this “multi-dimensional image” can be said to be evoked by the head. Indeed, Halliday & Matthiessen (2004: 325) call it the “semantic core of the nominal group”, and Croft (2001: 258) refers to it as the “primary information-bearing unit”. Furthermore, Sinclair (1991: 87) identifies the head as the “principle reference point to the physical world”.

From a cognitive perspective, the function of the nominal head relates to the concept of ‘categorisation’. Categorisation is when a unit A (within the language system) is activated and subsequently used to categorise a structure B (a facet of a usage event) (see Langacker 2007: 428–429; or see Bybee 2010: 7).⁹ In other words, upon seeing a cat, the linguistic unit *cat* is activated in our mental lexicon, thereby categorising the perceived entity as a cat. In uttering an expression referring to the object or concept in question, this linguistic unit then usually takes the place of ‘head’ within the uttered noun phrase. Thus, the head is representative of the mental type of a real world object, person, or abstract concept in the speaker’s mind; it is the syntactic and semantic core element of the noun phrase.

These definitions of ‘head’, be they from a structural, semantic or cognitive perspective, are all fairly straightforward with most types of noun phrases. Consider for example the three invented noun phrases in (2-1) to (2-3):

⁸ A possible exception to this rule of thumb would be Halliday & Matthiessen’s (2004: 331) treatment of adjectives as the central element of noun phrases in examples such as *You’re very lucky*. Furthermore, one particular theory that goes against the idea of the noun being the central element of a noun phrase is provided by supporters of the determiner phrase (DP) who claim determiners to be the core element of a noun phrase, i.e. determiner phrase (see for example Carnie (2007) or Hawkins (1993)). For an argument against the determiner phrase, see Payne (1993).

⁹ Within the Cardiff Grammar in Systemic Functional Linguistics, this notion is also known as ‘cultural classification’ (see for example Fawcett (1980) or Tucker (1996: 547)).

- (2-1) the black cat
- (2-2) the black cat from next door
- (2-3) the incredibly clever cat that opens our front door with its paws

In these three invented examples, the structural, semantic and cognitive core element is invariably the central noun *cat*, as each of the three entities described would be recognised and categorised as a cat. This, however, becomes more problematic in noun phrases where more than one noun competes for the position of head, such as *of*-NPs, as we shall see in the discussion in Section 2.1.2.

2.1.2 Headedness as a problematic concept in *of*-NPs

Unlike other noun phrases, the grammatical phenomenon of *of*-NPs presents a problem for the notion of head. With the preposition *of*, a second nominal element is introduced to the noun phrase which can compete for the role of head. Therefore, since the presence of two nominal elements within *of*-NPs prevents a simple identification of the head based on its ‘nouniness’, other determining criteria need to be established. Thus, in the following, seven potential features are introduced briefly with which it can be possible to identify the head of a noun phrase. In advance, note the use of the hedgers ‘potential’ and ‘can be’. They are prognostic of the fact that these seven features clash with each other, or are even contradictory within themselves, and thus do not render the identification of the head within *of*-NPs any more straightforward but rather underline its problematic nature. The seven features to be introduced in the following are mainly based on Zwicky (1984, 1993). They are, however, supplemented by other scholars’ related or additional concepts.¹⁰

The first, and most commonly mentioned head feature is its function as ‘semantic argument’ (see Zwicky 1984: 4–5; or Hudson 1987: 113). Keizer (2007: 10) refers to the same concept as ‘semantic characterization’ and in the Cardiff Grammar strand of Systemic Functional Linguistics it is known as ‘cultural classification’ (see Fawcett 1980; or Tucker 1996: 547). The ‘semantic argument’ refers to the semantic aspect of the head as discussed in Section 2.1.1. It means that the nominal head constitutes the semantic core of the whole noun phrase, i.e. the whole noun phrase refers to a kind of thing denoted by the head (see Zwicky 1984: 4; or Burton-Roberts 1997: 60). This idea becomes, however, problematic when we look at *of*-NP examples such as *a cup of tea*,

¹⁰ For a summary of all of these concepts, see Fraser, Corbett & McGlashan (1993: 1–2) or Keizer (2007: 9–21).

where it is unclear whether the expression as a whole refers to the entity *cup* or the entity *tea*.

In addition, the notion of ‘core’ relates to two further aspects of headedness, namely ‘distributional equivalence’ and ‘obligatoriness’. The former is based on the idea that the head can be said to have the same distribution as the overall noun phrase (see Zwicky 1984: 11–13; or Keizer 2007: 10). In other words, where there is a noun phrase there will also always be a noun. This relates to the idea that the head of a noun phrase is always a noun, the head of an adjective phrase is always an adjective, the head of a verb phrase is always a verb, and so on; or as Burton-Roberts (1997: 58, emphases removed from original) puts it: “it is the category of the head word that determines the category of the phrase as a whole” (also see Zwicky 1993: 297). In the above example of an *of*-NP, *a cup of tea*, however, there are two nouns which both have got an equivalent distribution to the whole noun phrase. Therefore, ‘distributional equivalence’ is also not helpful in identifying the head of an *of*-NP.

Similarly, the latter aspect of headedness that relates to the notion of ‘core’, i.e. ‘obligatoriness’, is also problematic. It refers to the fact that a noun phrase can consist of one noun only (e.g. *butter*), and that therefore the head noun is the one core obligatory entity without which a noun phrase cannot be grammatically complete (see for example Tallerman 1998: 90–91). This argument is unsatisfactory for two reasons. Firstly, noun phrases which consist of more than just the head noun, such as *the cat*, require for the determiner to be present as well, which is illustrated by the grammaticality and ungrammaticality of sentences (2-4) and (2-5) respectively:

(2-4) I bought *a cat*.

(2-5) *I bought *cat*.

Hence, it is not true that the head noun is the only element in a noun phrase that is obligatory to ensure the phrase’s grammaticality. With single, count nouns, there is also a need for a determiner. Obligatoriness is thus not a feature which singularly identifies the head of a noun phrase. Secondly, even if we assume obligatoriness to be an inherent feature of the head noun, *of*-NPs such as *a cup of tea*, subvert this feature as either of the nouns can be excluded without rendering the phrase ungrammatical. This is illustrated by the three invented examples in (2-6) to (2-8):

- (2-6) I would like *a cup of tea*, please.
(2-7) I would like *a tea*, please. / I would like *tea*, please.
(2-8) I would like *a cuppa*, please.

In (2-7) and (2-8), the *of*-NP in (2-6) has been reduced by excluding the first or second noun respectively. Thus, neither of the nouns in *a cup of tea* is completely obligatory for the expression to be grammatical, which illustrates that this criterion is questionable for the identification of the head element in *of*-NPs. Thus, while the notions of ‘semantic argument’, ‘distributional equivalence’, and ‘obligatoriness’ express qualities of the head and its status as core element, it is difficult to identify it within *of*-NPs based on these criteria only.

Therefore, a further test for headedness has been suggested, which considers the ‘selection restrictions’ of the expression’s verbal environment. Based on Akmajian & Lehrer (1976), Keizer (2007: 11) shows that sometimes a verb can help determine which of the two nouns within *of*-NPs functions as head, as is illustrated by (2-9) and (2-10) (taken from Keizer 2007: 11, emphases added):

- (2-9) He drank a bottle of *wine*.
(2-10) He broke a *bottle* of wine.

In (2-9), the verb *drank* semantically relates to *wine* rather than *bottle*, because it is the liquid that can be drunk and not the solid, glass object. In (2-10), on the other hand, the verb *broke* selects *bottle* as head of the noun phrase, due to the semantic impossibility of breaking wine. Thus, these two examples illustrate that the *of*-NP *a bottle of wine* can be interpreted differently based on its textual environment, further highlighting how the two nominal elements compete for the role of head.

Moreover, another identifying feature of the head element is its status as ‘determinant of concord’ (see Zwicky 1984: 8–9), or ‘subject-verb agreement’ as this phenomenon is more commonly referred to (see Keizer 2007: 12–17). In other words, if the head of an *of*-NP is indeed the determinant of concord, and if this *of*-NP functions as subject within a clause, then its head should determine the inflectional form of the clause’s main verb. The following two examples, taken from Keizer (2007: 12), illustrate this phenomenon:

- (2-11) Three reviews of the book were/*was received.
(2-12) A review of three books was/*were received.

Sentences (2-11) and (2-12) show that it is the grammatical number of *reviews* and *review* respectively that determine whether the copula *be* appears in plural or singular. The number of *book* or *books* does not have any influence in that process at all. Based on this criterion, the nominal element preceding *of* should be assigned the function of ‘head’. However, Kruisinga & Erades (1953: 50) show that it can sometimes also be the rightward noun with which the verb agrees as is shown in their example in (2-13):

- (2-13) *This race of wood owls have* exceptionally strong voices. (Kruisinga & Erades 1953: 50, emphases in original)

Moreover, again referring to Akmajian & Lehrer (1976), Keizer (2007: 12) illustrates that some *of*-NPs even allow for the verb to appear in both singular or plural. See example (2-14) taken from Keizer (2007: 12):

- (2-14) The herd of large African elephants was/were stampeding toward us.

Hence, based on this example, both nouns *herd* and *elephants* could be analysed as constituting the head of the noun phrase in (2-14). Complicating matters even further, Akmajian & Lehrer (1976: 410) point out that the head criterion of ‘subject-verb agreement’ sometimes conflicts with the ‘selection restrictions’ of the verb. Consider for example the two sentences in (2-15) and (2-16) taken from Keizer (2007: 13):

- (2-15) The Argentinian wine was delicious.
(2-16) The two bottles of Argentinian wine were/*was delicious

Example (2-15) shows that it is the wine that is tasty and not technically the bottles themselves. Therefore, in a corresponding analysis of the *of*-NP in (2-16), the head would be *wine* and not *bottles*. However, it is *bottles* with which the verb *were* concords. Thus, it becomes apparent that these two head-identifying criteria do not always coincide, which further ambiguates the notion of head.

Another notion, and according to Zwicky (1984: 3) the most important one next to the ‘semantic argument’, is the ‘morphosyntactic locus’. The morphosyntactic locus is the element of a phrase which carries inflectional marks (see Zwicky 1984: 6–7). Keizer (2007: 19) points out that, in English, the morphosyntactic locus of a noun phrase is thus the element which can bear the plural marker. However, she then goes on to say that

[a]lthough this criterion does, indeed, seem to cover most cases, it certainly does not solve all problems, as there are plenty of nouns in English which do not occur in the plural, such as mass nouns and proper names, while in other cases, more than one element can appear in the plural (e.g. *some boxes of chocolates*, *large numbers of children*, *these kinds of cars*). (Keizer 2007: 19, emphases in original)

Hence, even though the morphosyntactic locus seems to be a promising criterion at first, it also fails to account for all cases of noun phrases, particularly (as Keizer's quote illustrates) when it comes to certain examples of *of*-NPs.

Finally, the last head-identifying feature to be discussed here¹¹ is the notion of 'pronominalisation', as touched on by Keizer (2007: 20). She assumes "that the form of an anaphoric definite pronoun is determined by the features of the head of the antecedent NP". While this seems to be true in example (2-17), where the pronoun *it* refers back to the *box* rather than the *chocolates*, examples (2-18) and (2-19) suggest that again it is not always that straightforward (examples taken from Keizer 2007: 20):

(2-17) John gave me a box of chocolates. It was really big.

(2-18) John gave me a box of chocolates. He promised to buy me another one next week.

(2-19) John gave me a box of chocolates. He promised to buy me some more next week.

While *another one* in (2-18) refers back to the *box*, the expression *some more* in (2-19) suggests *chocolates* to be the head of the *of*-NP *a box of chocolates*. Thus, based on the context, either the first or second nominal element could be interpreted as the head of the *of*-NP. Once again, like the other features, this illustrates that the notion of headedness in *of*-NPs is a problematic one. No single one criterion has helped disambiguate the notion. In fact, the different criteria have been shown to either be problematic themselves or to contradict each other in certain instances of *of*-NPs.¹²

¹¹ Keizer (2007: 19) also discusses 'stress' as another head-identifying feature of *of*-NPs. However, since this study relies solely on the analysis of written language data, this feature is not considered any further. Instead, see Section 7.3 for directions on future research.

¹² For further debates on the notion of head, its nature and existence, see the various contributions in Corbett, Fraser & McGlashan (1993).

2.2 Previous accounts of the phenomenon of *of*-NPs

This problem of identifying the head also becomes apparent in previous accounts of *of*-NPs. In these accounts, some types of *of*-NPs have been treated as left-headed while others are said to be right-headed. However, there is even disagreement in the literature about the identity of the head within the same type of *of*-NP. This section now presents these different accounts and illustrates how the complicated nature of headedness in *of*-NPs is reflected in such conflicting accounts. Section 2.2.1 first introduces numerous accounts where *of*-NPs are only mentioned in passing. Sections 2.2.2 to 2.2.5, then, present the five central types of *of*-NPs which have been examined by previous literature most often and in more detail. Finally, Section 2.2.6 gives insight into three further studies which have not just focused on one type of the phenomenon but discuss *of*-NPs from a broader perspective.

2.2.1 The phenomenon of *of*-NPs mentioned in passing

The phenomenon of *of*-NPs is well embedded in the literature on the English noun phrase. In most cases, however, it is merely touched on as a special type of noun phrase. Thus, it can be found in many introductions and comprehensive discussions of English grammar in many different frameworks. An early, peripheral mention was made by Fries (1970: 2) who postulates that, in an *of*-NP such as *both of the men*, the element *both*—originally a determiner to the head noun in *both men*—now functions as the head of the phrase, thus proposing a traditional left-headed approach to *of*-NPs. Since then, however, many more accounts have been added.

For example, Quirk et al. (1985) offer a brief view on English *of*-NPs within their sections on genitives (1985: 321–331) and appositions (1985: 1284–1285). In the former, they juxtapose genitive expressions such as *the ship's name* with their equivalent *of*-NP, *the name of the ship* (1985: 320). This relationship between genitive clusters and possessive *of*-NPs is also further researched in Stockwell, Schachter & Partee (1973: 712–713) and Hawkins (1981), but for reasons of scope relations to grammatical phenomena other than *of*-NPs are not discussed any further within this study. In their section on appositions, then, Quirk et al. (1985: 1284) relate *of*-appositions such as *the city of Rome* to their equivalent so-called *be*-sentences, i.e. *Rome is a city*, whereby the former constitutes a nominalisation of the latter.

Martin (1992: 132–133), on the other hand, addresses the phenomenon of *of*-NPs within a brief discussion of so-called pre-elements, which he introduces as a “way

in which nominal groups can expand their structural potential to realise more than one participant” (Martin 1992: 133). He mentions four different types of such pre-elements:

Pre-Deictic:	the top of the mountain
Pre-Numerative:	a pair of boots
Pre-Epithet:	the tallest of the mountains
Pre-Classifier:	that kind of gear (Martin 1992: 133, emphases in original)

These four elements are mapped onto the prenominal functions common to English noun phrases, i.e. the Deictic, Numerative, Epithet and Classifier (see Halliday & Matthiessen 2014: 364–380), and result in the rightward noun being treated as the semantic core of the noun phrase—which Martin (1992), following Halliday (1985), calls ‘Thing’.

This notion of ‘Thing’ is also found in Systemic Functional Linguistics (henceforth also SFL), where *of*-NPs have also received some attention within discussions on the noun phrase. Throughout the four editions of Halliday’s *Introduction to Functional Grammar* (IFG) (Halliday 1985, 1994; Halliday & Matthiessen 2004, 2014), *of*-NPs appear in the discussion of the difference between the elements ‘Head’ and ‘Thing’, where the latter is the core element in the experiential metafunction and the former constitutes the same in the logical metafunction. Thus, in an *of*-NP such as *a cup of tea* for example, the first noun *cup* is analysed as ‘Head’ whereas the second noun *tea* fills the function of ‘Thing’ (Halliday & Matthiessen 2014: 392–396). The need for this division of labour of the core element between both nouns in *of*-NPs is further indicative of the problematic nature of the concept of headedness in these expressions.¹³

Finally, the phenomenon of *of*-NPs also appears in discussions on postnominal modification in the English noun phrase (see Huddleston 1984; Radford 1988: 174–217; Fries 1998; Keizer 2004). Mainly, these studies examine the difference between Complement and Adjunct in postnominal position. Therein, *of*-NPs are analysed as consisting of a leftward head noun and a prepositional phrase—with the preposition *of*—which functions as postnominal Complement. See for example the phrase in (2-20) taken from Fries (1998: 94):

¹³ Indeed, see Fontaine (in print) who argues against such a division between Thing and Head.

(2-20) a student of Physics with long hair

In this example, the prepositional phrase *of Physics* is analysed as a postnominal Complement to the head noun *student*. The Complement, Fries (1998: 94) argues, is always closer to the nominal head than prepositional phrases that merely function as Adjunct, such as *with long hair* in (2-20).

While these accounts only mention the phenomenon in passing, or focus on other, related grammatical phenomena, there is an abundance of literature entirely devoted to *of*-NPs and their internal structure. Throughout the literature, there are four main types of *of*-NP that are discussed most often. Although referred to by various, different terminology, in the following, these four types are called ‘quantifier *of*-NPs’, ‘partitive *of*-NPs’, ‘SKT *of*-NPs’, and ‘appraisal *of*-NPs’. Each of these four *of*-NP types is briefly discussed in Sections 2.2.2 to 2.2.5, further illustrating the problematic nature of the concept of headedness in English *of*-NPs.

2.2.2 Quantifier *of*-NPs

The first of the four main types of *of*-NPs are quantifier *of*-NPs (better known in the literature as ‘pseudo-partitives’).¹⁴ As stated by Austin (1980: 362), these *of*-NPs characteristically take a common measure noun such as *bunch* in *a bunch of flowers* as first nominal element, although rarer measure nouns such as *mountain* in (2-21) taken from Austin (1980: 362) are also possible.

(2-21) a mountain of eggs

Overall, the literature recognises five different types of quantifier *of*-NPs in the English language, based on the type of measure noun they contain. Keizer (2007: 109) lists them with the following examples:

Quantifier-noun constructions: *a number of people*

Measure-noun constructions: *a pint of beer*

Container-noun constructions: *a box of chocolates*

Part-noun constructions: *a piece of cake*

Collection-noun constructions: *a herd of elephants*

¹⁴ Quantifier *of*-NPs are said to be related to the partitive *of*-NPs introduced in Section 2.2.3 below, but are generally taken to form a separate category based on formal restrictions, such as in- or excluding certain types of nouns after the preposition *of* or whether they allow for extraposition or not (see Selkirk 1977; Ladusaw 1982; Abbott 1996; Keizer 2007: 109–110).

What these types of quantifier *of*-NP have in common is that the first nominal element expresses some quantity of the second nominal element, whereas they differ in the type of measure noun they contain. Keizer (2007: 112–116) neatly describes these five types as follows: Quantifier nouns, such as *number* in *a number of* above, “do not indicate an exact number or amount, but can be paraphrased by means of such simple quantifiers as *many/much, few, some, several, etc.*” (Keizer 2007: 112, emphases in original). Measure nouns, on the other hand “may serve to indicate precise measures, such as *inch, pint, [...] metre or pound*, as well as imprecise ones, such as *amount, gulp, pile, dose, load or percentage*” (Keizer 2007: 113, emphases in original). Thirdly, “with container nouns, N₁ serves to restrict overall reference of the construction by limiting reference to the amount the object denoted by N₁ can contain. Examples of container nouns are *glass, bucket, tin, packet, bag, barrel, bottle, box, cup, pot, tablespoon*” (Keizer 2007: 113–114, emphases in original).¹⁵ The fourth type of quantifier *of*-NPs contain part nouns, which “indicate an amount of the substance indicated by the second noun. Examples are *bit, block, bulb, loaf, nugget, part, piece, sheet, slice and strip*” (Keizer 2007: 115, emphases in original). Finally, the last type of quantifier *of*-NPs contain collective nouns. “These nouns, such as *clique, circle, batch, team, group, crowd, bunch, series, pair, party, and army*, serve to indicate a subset of the set denoted by N₂” (Keizer 2007: 115–116, emphases in original). Note that, in English, the highly productive class of collective nouns, such as *a flock of sheep, a herd of cattle, a pandemonium of parrots or a flamboyance of flamingos*, also belong to this type of quantifier *of*-NP.¹⁶

Structurally, Keizer (2007: 111) suggests a uniform analysis of quantifier *of*-NPs as right-headed, which follows other scholars’ analyses of these expressions (see for example Selkirk 1977; or for an account in SFL, see Fawcett 2007). In this case, N₁ would be part of a complex quantifier, modifying the head noun N₂. However, Keizer (2007: 150) then states that, in some quantifier *of*-NPs, N₁ “can also have a referential use, in which case [it] function[s] as the syntactic and semantic head of a head-complement construction”. Thus, the structural interpretation of these expressions

¹⁵ The leftward noun of the *of*-NP is here referred to as N₁. Consequently, the rightward noun is called N₂. This terminology, which is used (with slight differences) in a large portion of the literature, is used in these sections here too. Chapter 3, however, then establishes the notion of ‘conceptual entities’ which is used to refer to the whole unit (and not just the noun) in front and after *of*, and which then replaces this notation.

¹⁶ For extensive collections of such collective nouns see Shulman (2009), Faulkner et al. (2013), or Rhodes (2014).

seems to be ambiguous and, as suggested above, the question of headedness is problematic.

Indeed, this ambiguity has been picked up by other scholars as well. Most notably, Brems (2003, 2010) analyses the measure-noun constructions with *bunch of*, *load of*, *heap(s) of*, *pile(s) of* within the framework of grammaticalisation.¹⁷ She argues that the two different structural interpretations of quantifier *of*-NPs are due to a diachronic shift from the initial left-headed structure to a new, more grammaticalised, right-headed interpretation. In the former, the measure noun is head whereas in the latter it is part of a grammaticalised, complex quantifier to N₂. Synchronically, both structures are, however, still in use, which accounts for the present-day structural ambiguity with these expressions. Examples of these two structural interpretations are given in the examples (2-22) to (2-25) taken from Brems (2010: 91–92, emphases and revisions in original):

- (2-22) They cast up **two heaps of stones**, the one at his head, the other at his feet.
- (2-23) **Six plane loads of food** are also being flown today to the city of Baidoa.
- (2-24) Vast quantities of rich merchandise glittered in the shops as we passed along to the gates. **Heaps of fruit and sweetmeats** set half the grandams [older women] and infants in the place a-cackling with felicity.
- (2-25) [T]he attempt to force improvements, which, however flattering the prospect at first, soon produced **a load of debt**, and inextricable embarrassments.

Examples (2-22) and (2-23) are both instances of an *of*-NP where the measure noun N₁ is used referentially. In other words, the expressions refer to particular instances of *heaps* and *loads* respectively. Therefore, the measure nouns are taken to be the head of the expressions. In examples (2-24) and (2-25), on the other hand, the nouns *heaps* and *load* are only used to indicate that there was a large quantity of *fruit and sweetmeats* and *debt* respectively. In these cases, N₂ is head while N₁ functions as part of a complex quantifier.

While Brems (2003, 2010) only offers a detailed analysis of this shift from referential head use of N₁ to its quantifier use with the specific expressions *bunch of*,

¹⁷ For a detailed account of the levels of grammaticalisation in quantifier *of*-NPs, see Brems (2011). Also see Traugott (2008a, 2008b).

load of, *heap(s) of* and *pile(s) of*, structural ambiguity also exists with other types of quantifier *of*-NPs, as becomes evident when looking at the following quote from Langacker (1991: 88, as quoted in Brems 2003: 289, emphasis in original):

For instance, a bathtub may contain *a bucket of water* without there being any bucket in it – it is only implied that the water would fill a bucket were it placed in one.

This example of Langacker's is an instance of a quantifier use of *bucket*. However, the same expression can also be put into another context where, in turn, *bucket* functions as the head of the overall expression. See for example the sentence in (2-26):

(2-26) He placed *the bucket of water* next to the bathtub.

In other words, “even in clear instances of [quantifier *of*-NPs], ambiguity may arise between a container reading and a purely quantificational reading” (Keizer 2007: 114). Hence, quantifier *of*-NPs also illustrate how the question of headedness—even just within one type of *of*-NP—is far from straightforward.

2.2.3 Partitive *of*-NPs

The second type of *of*-NP which has been given a lot of attention in the literature are the so-called partitives or partitive *of*-NPs. As Keizer (2007: 65, emphasis in original) points out,

[t]he large body of research on partitives addresses many different aspects of the partitive construction, such as the form and function of the first element, the (syntactic and semantic) constraints on the second nominal element, the status of the element *of*, the overall analysis of the constructions, their distribution, the discourse function of the second element, etc.

In order to offer a brief introduction to partitives only, the following review, however, does not cover all of these aspects but only touches on the form of this type of *of*-NP, some semantic aspects, and a few structural representations that have been suggested by different scholars.

Like other *of*-NPs, partitives formally consist of two nominal elements linked by the element *of*. Unlike other *of*-NPs, however, the first nominal element is filled by a pronominal element rather than a noun. It can either consist of a quantifying pronoun like *some*, *many* or *most*, or a numeral pronoun like *one*, *two*, or *fifty-seven*. The

expressions in (2-27) to (2-29) are examples of partitives taken from Selkirk (1977: 288):

- (2-27) many of these people
- (2-28) each of the women
- (2-29) three of the chapters

Furthermore, in partitives, not all types of noun phrase can appear after the element *of*. Consider for example the ungrammaticality of the expressions in (2-30) and (2-31) taken from Keizer (2007: 67–68)

- (2-30) *many of objections
- (2-31) *few of many questions

Many scholars have taken to defining the constraints for the NP following *of* in partitive constructions, the different views on which are all presented chronologically by Keizer (2007: 67–70). In summary, Keizer (2007: 69) proposes that

the embedded NP of a partitive construction must be referential. Only if the preposition [*of*] is followed by a referential NP, referring either to an evoked or inferrable discourse entity or introducing a new entity into the discourse, are we dealing with a partitive construction.

For example, consider the expression in italics within its context in (2-32) taken from Keizer (2007: 69, emphasis in original):

- (2-32) I know you have too many acquaintances, but you only need to bring two of them. *Two of too many acquaintances* is still only two.

Thus, her suggestion not only explains why examples (2-30) and (2-31) are ungrammatical, but also allows for expressions like the one in (2-32) to be acceptable.

Semantically, the pronominal N₁ element takes its meaning cataphorically from the following N₂ of which it denotes either a member or a subset (see Keizer 2007: 65–66). For example, “the phrase *one of the stallholders* refers to a single individual who is member of a set of stallholders” (Keizer 2007: 66, emphasis in original). Similarly, the phrase *most of this cheese* refers to a specific section of the cheese only.

Finally, structurally, the various accounts of these *of*-NPs disagree considerably, mainly in reference to headedness. Again, the field can roughly be split up into right-

headed and left-headed approaches. One of the right-headed accounts is given by Keenan & Stavi (1986: 287–288) who analyse partitives as consisting of a complex determiner, i.e. $\text{Det}_1 + \textit{of} + \text{Det}_2$, which premodifies the head noun (N_2).

Keizer (2007: 67), however, raises several issues with right-headed approaches to partitive *of*-NPs. She states that if we analyse the $\text{Det}_1 + \textit{of} + \text{Det}_2$ cluster as a complex determiner, “it cannot account for the fact that N_2 can take an NP as its antecedent (*one of them*; *many of whom*)” (Keizer 2007: 67, emphasis in original), considering that pronouns such as *them* and *whom* stand for full NPs rather than just single nouns (see for example Burton-Roberts 1997: 58). A solution to this problem can be found in a more recent contribution by Fawcett (2007) in his paper on ‘selection’ within SFL. Fawcett (2007: 180–181) also analyses partitive *of*-NPs as right-headed and treats the first nominal element, i.e. the quantifier or numeral, as a ‘quantifying determiner’ followed by the selector element *of*.¹⁸ The second determiner then functions as an individual ‘deictic determiner’ within a chain of determiners. What follows is that this deictic determiner allows the potential to be replaced by a pronoun together with N_2 .

A further problem that is introduced by Keizer (2007: 67, emphasis in original) is that a right-headed approach “incorrectly predicts that overall reference of a construction like *one of the boys* is plural and definite”. This argument relies on one of Zwicky’s (1984: 8–9) head features introduced in Section 2.1.2 above, namely the ‘determinant of concord’, which states that the head element determines the overall number of its phrase. Thus, on the basis of this head feature, Keizer (2007: 67) criticises a right-headed approach to partitives considering that *one of the boys* is clearly singular whereas *boys* is plural and can therefore not be interpreted as the NP’s head. Keizer (2007: 70) thus argues for a left-headed approach to partitive *of*-NPs and proposes that the head noun N_1 is left unexpressed.¹⁹ In conclusion, it is thus evident that there is still little agreement on the internal structure of partitive *of*-NPs and a fully satisfying analysis of partitive *of*-NPs based on headedness is not yet possible.

¹⁸ It is important to note that Fawcett (2007: 196) uses the term ‘partitives’ to refer to another type of *of*-NP, namely the ones that answer the question of ‘What part or parts of it (or them)?’, such as *the back of the house* or *the peaks of the mountains*.

¹⁹ For an account arguing against such a null noun approach, see Shin (2016) who analyses the quantifier in partitives as the direct head taking a PP as Complement.

2.2.4 SKT *of*-NPs

The third main type of *of*-NPs in the literature are those consisting of one of the three nouns *sort*, *kind*, or *type* in the position of the first nominal element (see Keizer 2007: 152). They are here referred to as ‘SKT *of*-NPs’, containing an acronym of *sort*, *kind* and *type* also used by Keizer (2007: chapter 7). In the literature, there are five different types of SKT *of*-NPs. Only one of these types, the ‘referential SKT *of*-NP’, is said to be left-headed, i.e. either *sort*, *kind*, or *type* being the head of the full NP. The remaining four types, on the other hand,—the ‘qualifying SKT *of*-NP’, the ‘modifier SKT *of*-NP’, the ‘postdeterminer SKT *of*-NP’ and the ‘quantifier SKT *of*-NP’—are said to be derived historically from the former through the process of grammaticalisation, which has led to them being right-headed (for this historical development of grammaticalisation, see Davidse et al. 2008; Brems & Davidse 2010). In the following, we will briefly have a closer look at each of these five types of SKT *of*-NPs.

The main type of SKT *of*-NPs is the referential one.²⁰ As an example of this type, take a look at the sentence in (2-33) as given in Keizer (2007: 152, emphasis in original):

- (2-33) I work in the Department of Oncology and my main involvement is
mainly into research of a particular *type of lung cancer*

Semantically, referential SKT *of*-NPs “have generic reference; they refer to (whole) subclasses of the superordinate classes expressed by N2. [...] they are used in contexts building up generic and taxonomic interpretations of the world” (Brems & Davidse 2010: 184). Or as Keizer (2007: 153) puts it, “overall reference of these constructions is to a particular sort/kind/type of entity, specified by N₂”. Thus, in example (2-33) above, reference is made to one particular *type* of lung cancer only and not to the whole class of different kinds of lung cancer. Due to this semantic centrality of N₁, referential SKT *of*-NPs are analysed as left-headed. In addition, the head status of N₁ can be further attested by one of Zwicky’s (1984) tests, namely the fact that N₂ can be omitted

²⁰ The term ‘referential’ for these SKT *of*-NPs is taken from Keizer (2007). Davidse et al. (2008) and Brems & Davidse (2010), in reference to Denison (2002), use the term ‘binominal construction’ instead. This term, however, has been disfavoured for the study at hand because other scholars (see for example Aarts 1994; 1998; also see Section 2.2.5 below) have used the term ‘binominal’ to refer to other *of*-NPs (e.g. the appraisal *of*-NPs), and it could in fact be applied to most types of *of*-NPs as most of them consist of two nominal elements.

as is illustrated by the example (2-34) taken from Keizer (2007: 153, emphasis in original):

- (2-34) Have you ever tried this type of dish?– No, *this type* I have never had before.

The referential SKT *of*-NP is the only one of the five where N_1 is the head with the following *of*-phrase as its complement (see Keizer 2007: 153). The other four SKT *of*-NPs are all right-headed, as we shall see in the following.

The first type of these right-headed SKT *of*-NPs is the ‘qualifying’ one. It is, compared to the other three, the one that is discussed in the literature most frequently (see for example Bolinger 1972; Quirk et al. 1972; Tabor 1994; Aijmer 2002; Denison 2002; Keizer 2007; Davidse et al. 2008; Davidse 2009; Brems & Davidse 2010). Keizer (2007: 153–154, emphases in original) states that within qualifying SKT *of*-NPs

N_1 does not function as a noun; instead it will be taken to combine with the element *of* to form a sequence (*sort-of/kind-of*) with a qualifying function. This leaves N_2 the likely head of the construction. Interestingly, however, the entity, or set of entities, referred to, or denoted, by the construction as a whole does not (or not quite) belong to the class of elements denoted by N_2 .

This last fact is due to the *sort-of/kind-of* sequence’s status as ‘downtoners’, hedging or otherwise nuancing N_2 (see Keizer 2007: 164; Davidse et al. 2008: 191). Consider example (2-35) taken from Keizer (2007: 164, emphasis in original):

- (2-35) But it got as far as that which *is sort of a kind of walnut cake*

In (2-35), N_2 *cake* is preceded by two *sort-of* and *kind-of* expressions. The expressions and their repetition express the fact that the speaker is not really sure or does not want to commit to whether the category *walnut cake* is appropriate for the specific baked goods they are referring to. Hence, in qualifying SKT *of*-NPs, the *sort-of/kind-of* expression is used as a hedging device to downtone the nominal head element N_2 .

The second type of right-headed SKT *of*-NPs are ‘modifier *of*-NPs, and are best exemplified by the examples (2-36) and (2-37) as found in Davidse et al. (2008: 147, emphases in original):

(2-36) It's **a cool quirky kind of song**, ...

(2-37) I think only one is **a love *typ*a song**.

As pointed out by Davidse et al. (2008: 147), these *sort of/kind of/type of* uses are characteristically preceded by one or more adjectival or nominal modifiers which are “related to N rather than *sort*, both in semantics and in concord” (Quirk et al. 1972, as quoted in Davidse et al. 2008: 147, emphasis in original). Furthermore, “[t]he crucial difference [between modifier SKT *of*-NPs and referential SKT *of*-NPs] is that the latter refer to ‘subtypes’, while NPs such as *a quirky kind of song*, *a love type song* refer to ‘instances’” (Davidse et al. 2008: 148, emphases in original). This is further illustrated by the fact that, within modifier SKT *of*-NPs, N₁ often takes an indefinite determiner. The indefinite determiner in (2-37), for example, shows that the speaker is referring to *one* particular song only rather than to a subclass of songs. Brems & Davidse (2010: 188) even go as far as to claim that the *type/kind/sort* noun “functions more or less as a clitic or suffix to the preceding lexical material”, thus demoting N₁ even further from its head status.

Within the third right-headed SKT *of*-NP—the ‘postdeterminer SKT *of*-NP’—the *sort/kind/type* noun functions as a postdeterminer to N₂. This is illustrated by the text excerpt in (2-38), taken from Brems & Davidse (2010: 181, emphasis in original):

(2-38) “Our very pride, methinks, should be a sufficient guard, and turn
whatever favourable thoughts we might have of such a one, unknowing
his design, into aversion, when once convinced the presumed upon our
weakness”. In *these kind of reasonings* did she continue some time.

Whereas referential SKT *of*-NPs are often used to establish “generic and taxonomic interpretations of the world” (Brems & Davidse 2010: 184), postdeterminer SKT *of*-NPs are used anaphorically, referring back to “a complex of properties present in, or inferrable from, the discourse situation” (Keizer 2007: 184). Thus, in example (2-38), the complex determiner—made up of the primary determiner *these* and the postdeterminer *kind of*—refers back to the preceding utterance of the female character and identifies it as *reasonings*. In other words, *these kind of* is said to be “a local generalization” (Davidse et al. 2008: 152), an abstract instantiation referring back to the preceding complex of characteristics, identifying them as one *kind* of thing, i.e.

reasonings.²¹ Furthermore, the complex determiner can, in these instances, usually be replaced by the predeterminer *such*, i.e. *such reasonings* instead of *these kind of reasonings* in example (2-38) above (see Brems & Davidse 2010: 181).

Finally, within the last type of right-headed SKT *of*-NPs—‘quantifier SKT *of*-NPs’—the *sort/kind/type* noun functions as a quantifier. Unlike the other types of SKT *of*-NPs, however, this type is a more fixed expression, which has undergone lexicalisation, the “process by which new linguistic entities, be it simple or complex words or just new senses, become conventionalized on the level of the lexicon” (Blank 2001: 1603, as quoted in Davidse et al. 2008: 158). In this type of SKT *of*-NP, the plural forms *kinds* and *sorts* are preceded by *all* to form a fixed complex quantifier whose meaning is best expressed by ‘many’ (see Brems & Davidse 2010: 188), as is illustrated by example (2-39) taken from Brems & Davidse (2010: 188, emphasis in original):

- (2-39) I Answered, That Religion being a design to recover and save Mankind, was to be so opened as to awaken and work upon *all sorts of people*, and generally men of a simplicity of Mind, were those that were the fittest Objects.

Moreover, “[i]n addition to ‘large quantity’, these uses do add the notion of ‘variety’, making it similar in meaning to the quantifier *various*” (Brems & Davidse 2010: 189, emphasis in original). Hence, in example (2-39), the expression *all sorts of people* could be replaced by *various people* or also *many different people*, to express the meaning denoted by the quantifier SKT *of*-NP. In conclusion, SKT *of*-NPs have been treated in the literature as both left- or right-headed depending on the degree of grammaticalisation of the first nominal.²²

2.2.5 Appraisal *of*-NPs

Finally, the fourth and last type of *of*-NP that shall be discussed here is very prominent in the literature, even though it is a rather infrequent phenomenon (see Aarts 1998: 121). Many linguists have discussed the nature of this type of *of*-NP, most notably

²¹ For a broader discussion of postdeterminers (or ‘secondary determiners’), including SKT *of*-NPs, see Breban (2011). For more on such phoric relations established by SKT *of*-NPs, see Breban, Davidse & Ghesquière (2011: 2691–2692)

²² For a detailed account of the levels of grammaticalisation in SKT *of*-NPs, see Brems (2011). Also see Traugott (2008a, 2008b), and for a frequency-based, experimental account of grammaticalisation in *of*-NPs see Vogel Sosa & MacFarlane (2002).

Austin (1980), Napoli (1989), Aarts (1994, 1998) and Keizer (2007: chapter 5), as well as some recent research by Gil Vilacoba (2013) ten Wolde (2014) and Kim & Sells (2015). This literature usually refers to these *of*-NPs as ‘binominal noun phrases’. Since this term is, however, rather misleading—excluding other noun phrases that contain two nouns and would thus also be binominal—this type of *of*-NP is here referred to as ‘appraisal *of*-NPs’. What these *of*-NPs have in common is that the first nominal element is invariably evaluative, expressing some positive or negative appraisal of the second nominal element (see Aarts 1998: 121; Keizer 2007: 86; Halliday & Matthiessen 2014: 393). Examples of this phenomenon, taken from the literature, are given by the expressions (2-40) to (2-43), also including the two metaphorical *of*-NPs introduced as examples (1-7) and (1-8) at the beginning of Chapter 1, here repeated as (2-42) and (2-43) respectively:

(2-40) that crook of a chairman (Napoli 1989: 209)

(2-41) a fool of a doctor (Keizer 2007: 108)

(2-42) a crescent-shaped jewel of an island (Austin 1980)

(2-43) *a cow of an awkward pause* mooed (Mitchell 2006: 65, emphasis added)

In the above examples, *that crook*, *a fool*, *a crescent-shaped jewel*, and *a cow* thus evaluate the second nominal elements *a chairman*, *a doctor*, *an island*, and *an awkward pause* respectively. Furthermore, there are two types of appraisal that can be expressed by the first nominal element. Either it expresses a literal attribute of the second (e.g. expressions (2-40) and (2-41) above), or its meaning is figurative only (e.g. expressions (2-42) and (2-43) above) (see for example Keizer 2007: 87).²³

There seems to be general agreement on these semantic features of appraisal *of*-NPs. Like the other three types of *of*-NPs above, however, they pose a problem regarding the identity of the head noun, roughly splitting the various accounts into two opposing fields: the double-headed approach and the right-headed approach. As a proponent of the former, Napoli (1989) argues that, within appraisal *of*-NPs, N₂ is the semantic head but that, structurally, N₁ is the head followed by a prepositional phrase.

²³ Austin (1980: 357–360) gives a historical account of appraisal *of*-NPs. She states that the literal type used to be the predominant type of appraisal *of*-NPs with examples such as *a ryght good knyght of a yonge man*, as given in the *A New English Dictionary* (the expression is also found in the more recent *Middle English Dictionary* (Kuhn 1980: 76)). According to Austin (1980: 360) the example *’Twas a strange riddle of a lady*, originating from 1663, is the first figurative appraisal *of*-NP that is listed in the *New English Dictionary*.

This approach is supported by systemic functional linguists Halliday & Matthiessen (2014: 393), who analyse N_1 as ‘Head’ within their logical metafunction of language and N_2 as ‘Thing’ within the experiential metafunction. Hence, the double-headed approach ascribes a central function to both nouns within appraisal *of*-NPs, either on semantic or on syntactic grounds.

However, with direct reference to Napoli (1989), the double-headed approach is refuted by Aarts (1994: 10) “[o]n general grounds of elegance and economy” arguing that “an analysis in which semantic and syntactic heads coincide is to be preferred over an analysis in which the two are distinguished”.²⁴ He proposes an analysis where N_2 is both semantic and syntactic head and claims that these expressions have, “to a greater or lesser degree, been subject to a process of grammaticalisation, such that in a structure like *a giant of a man* the string *of a* has been reanalysed as belonging with *giant*” (Aarts 1994: 24, emphases in original). While his reasons for rejecting the double-headed approach are merely based on “elegance and economy”, his claim is supported by other linguists. Keizer (2007: chapter 5) for example presents a right-headed analysis of appraisal *of*-NPs due to the second noun’s “more descriptive and more explanatory power” (Keizer 2007: 106). Her analysis suggests the first noun to be “part of a complex modifier” (Keizer 2007: 108) which is equal in its status to an adjective (e.g. *a fool of a doctor* relates to *a foolish doctor*) (also see McCawley 1988: 740–743). Thus, the example of appraisal *of*-NPs further illustrates the difficulty encountered when examining the internal structure and the headedness of *of*-NPs.

2.2.6 Three broader accounts of *of*-NPs

As shown in Sections 2.2.2 to 2.2.5 above, the four accounts of different types of *of*-NPs support the argument made in Section 2.1 on headedness. The notion of head in *of*-NPs is indeed problematic, and there seems to be considerable disagreement amongst scholars on how to structurally analyse these expressions. In addition to these numerous studies on individual types of *of*-NPs, there are three studies which examine the phenomenon more broadly, looking at more than one type of *of*-NP and bringing them all together under one framework. These three studies, namely Francis et al.’s (1998) list of ‘N of n’ patterns, Fawcett’s (2007) selection principle, and Keizer’s

²⁴ Aarts (1994: 10) goes on to say that “[a] more specific reason for adopting a ‘unified’ head analysis is that it makes the task of explaining the so-called ‘logical problem of language acquisition’ (see Hornstein & Lightfoot 1981) easier: there will be only one concept of head for a language learning child to acquire”. Also see Section 1.2.1.

(2007) comprehensive monograph on *of*-NPs, offer important insights on the phenomenon and shall thus each be briefly presented in the following three Sections 2.2.6.1 to 2.2.6.3.

2.2.6.1 Francis, Hunston & Manning's list of 'N of n' patterns

With their seminal works on patterns in English grammar, Francis et al. (1996, 1998) have gathered a comprehensive collection of English grammar patterns for verbs, nouns and adjectives. Their second volume thus also includes a list of 'N of n' patterns (see Francis et al. 1998: 176–199). Including “the 5,000 most frequently occurring nouns in the Bank of English” (Francis et al. 1998: 176), they categorised these patterns into a total of 39 groups based on the meaning of the first noun. The second noun is analysed as belonging to “a prepositional phrase which consists of *of* and a noun group” (Francis et al. 1998: 176, emphasis in original). Hence, in light of the discussion above, these 39 'N of n' patterns are presented as left-headed, with the first noun as the structural and semantic core. In addition, the 39 groups are named after one of the central nouns occurring in each, e.g. the 'construction group', the 'town group', or the 'box group'. Many of these groups are reminiscent of the four types of *of*-NPs discussed above, and they are indeed also revisited in the novel categorisation of *of*-NPs in Chapter 4, Section 4.3.2. In the following, a few of these meaning groups shall be presented before moving on to the second broad study on the phenomenon of *of*-NPs.

One of the first groups mentioned in Francis et al. (1998: 178–179) is the 'construction group', where the first noun “refers to an action or process, and the noun group after *of* indicates the thing that has something done to it” (Francis et al. 1998: 178). Expressions of this group are given in the examples (2-44) to (2-46) taken from Francis et al. (1998: 178–179) with their corresponding paraphrase in parentheses.

- (2-44) the abolition of the monarchy (*the monarchy was abolished*)
- (2-45) the design of several stations for the Underground (*several stations for the Underground were designed*)
- (2-46) the theft of tiny computer memory chips (*tiny computer memory chips were stolen*)

Note that the action or process in the first noun does not necessarily have to be derived from a verb, as is apparent in the noun *theft* in (2-46) which is more aptly paraphrased by the verb *stolen*. Another set of meaning groups of Francis et al. (1998) contain the

quantifier *of*-NPs introduced in Section 2.2.2 above. These include the ‘piece group’ (*a block of ice*), the ‘gang group’ (*a growing army of parents*), the ‘box group’ (*a cup of tea*), the ‘kilometre group’ (*kilometres of white sandy beaches*), the ‘fraction group’ (*a fraction of a second*), the ‘percentage group’ (*the majority of people*), and the ‘article group’ (*one clove of garlic*) (see Francis et al. 1998: 186–191). Furthermore, their ‘type group’ includes the SKT *of*-NPs discussed in Section 2.2.4, but also adds other nouns than *sort*, *kind*, and *type* that serve the same function of typicity, such as *class*, *form*, *shades*, or *variety* (see Francis et al. 1998: 197). While there are a multitude of other ‘N *of* n’ patterns in this list, they shall not all be presented in greater detail here, although Section 4.3.2, which discusses the different types of *of*-NPs found in the corpus dataset, does revisit some of them.

2.2.6.2 Fawcett’s selection principle in *of*-NPs

In his paper on the selection principle between referents in the English noun phrase, situated within the systemic functional framework of the Cardiff Grammar, Fawcett (2007) takes a right-headed approach to a multitude of *of*-NPs. Outlined in Fawcett (1980: 202–205), he bases his analysis on the idea that *of*-NPs contain two referents, i.e. the substantive referent and the widest referent, where the former is selected from the latter (see Fawcett 2007: 182). To illustrate, see the following example of an *of*-NP taken from Fawcett (2007: 182):

(2-47) five of those books (*quantifying determiner*, qd)

According to Fawcett (2007), the widest referent in (2-47) is the particularised referent *those books*. By the means of ‘selection by quantity’, a smaller referent is then selected, thus creating the substantive referent *five of those books*. In Fawcett’s framework (1980, 2007), the element *of* is thus described as a ‘selector’, while *five* is analysed as a quantifying determiner. Accordingly, the noun following the selector *of* constitutes the head of the whole *of*-NP. Hence, Fawcett claims that *of*-NPs consist of a determiner plus selector—where the determiner may be expressed by a noun phrase—which select the substantive referent from the widest referent. Indeed, next to the quantifying determiner he then goes on to present a set of eight further determiners, which are also instances of selection within *of*-NPs (see Fawcett 2007: 194–197). Examples of each of these determiners, taken from Fawcett (2007: 194–197), are given in the examples (2-48) to (2-55) alongside their description in parentheses:

- (2-48) the most interesting of those books (*superlative determiner*, sd)
- (2-49) all of his benefactors (*totalising determiner*, tod)
- (2-50) a third of the prints (*fractionative determiner*, fd)
- (2-51) the first of the runners (*ordinative determiner*, od)
- (2-52) the porches of those houses (*partitive determiner*, pd)²⁵
- (2-53) those of her family who are mentioned in her will (*qualifier-introducing determiner*, qid)
- (2-54) a photo of our house (*representational determiner*, rd)
- (2-55) two new types of ants (*typic determiner*, td)

All of these determiners—together with the selector *of*—are an instance of selection with a substantive and a widest referent.

In addition to this list of determiners, Fawcett (2007: 198–199) then continues to present the sequence in which these determiners can occur. In brief, he offers the following, simplified sequence of these determiners, where, next to the abbreviations given in examples (2-47) to (2-55) above, *v* stands for ‘selector’, *dd* for deictic determiner, and *h* for head (Fawcett 2007: 189):

td/rd v pd v qd v od v sd v tod v qid v dd..... h

Examples of such embedded *of*-NPs, taken from Fawcett (2007: 195–197) are given in (2-56) to (2-58):

- (2-56) one of the most generous of all of his benefactors
- (2-57) a photo of the back of our house
- (2-58) one of the first of the new varieties of GM wheat

In (2-56), the *of*-NP consists of the quantifying determiner *one*, the superlative determiner *the most generous*, and the totalising determiner *all*. Example (2-57), on the other hand, contains the representative determiner *a photo*, followed by the partitive determiner *the back*, while example (2-58) consists of the quantifying determiner *one*, the ordinative determiner *first*, and the typic determiner *the new varieties*. Since embedding of *of*-NPs has also been encountered in the corpus of *of*-

²⁵ Note that this ‘partitive determiner’ is not to be confused with the ‘partitive *of*-NPs’ of Section 2.2.3. The partitive *of*-NPs are better covered by Fawcett’s quantitative determiner, superlative determiner, totalising determiner, as well as ordinative determiner.

NPs, this sequence of Fawcett's selection principle shall be revisited again in Section 4.3.3, which presents the *of*-NP clusters that were found in the corpus dataset.

2.2.6.3 Keizer's extensive monograph on *of*-NPs

Finally, the third study which offers a representative discussion of the overall phenomenon of *of*-NPs is Keizer's (2007) monograph *The English Noun Phrase*, which is the most detailed and extensive account of this grammatical phenomenon to date. Much of what Keizer presents in this work has been included in previous sections or shall be picked up in later ones. Therefore, it shall not be reviewed in detail in this section. However, it is worth mentioning that the first section of Keizer (2007) consists of a detailed review of literature on *of*-NPs, in which she examines the four different types of *of*-NPs (as presented in Sections 2.2.2 to 2.2.5 above) in great detail, and offers both syntactic accounts as well as semantic restrictions. Indeed, each type of *of*-NP is given its own section in the book. In so doing, however, the different types of *of*-NPs are once again treated in isolation with different structural representations—of both the left- and right-headed type—and not as members of the same overarching grammatical phenomenon whose overall nature is thus neglected, as well as any idiosyncratic instances thereof. In a second section, then, Keizer (2007) goes on to offer a cognitive approach to the phenomenon, examining the difference between complements and modifiers (also see Huddleston 1984; Radford 1988: 174–217; Fries 1998; Keizer 2004), discontinuity in *of*-NPs (also see Selkirk 1977; Ladusaw 1982; Abbott 1996), and possessive constructions (also see Stockwell et al. 1973; Hawkins 1981). Throughout the whole work, however, the notion of headedness builds the foundation for the discussion, and the individual types of *of*-NPs are considered to be structurally different, with varying reasons for either a left- or a right-headed approach.

2.3 A brief note on *of*

In a study on noun phrases where *of* constitutes the central element, it is necessary to briefly consider its role, and establish how it is treated within this study. In traditional grammars, and introductions to grammar, the element *of* is simply known as a preposition, most commonly associated with a notion of 'having', i.e. with possession (see for example Crystal 2004: 193). However, the nature of *of* is more multifaceted than that. According to Lindstromberg (1997: 195), this diversity mainly stems from many new French constructions being brought into English after 1066 which gave *of*

new uses previously unknown. Indeed, this diversity also becomes evident in the accounts of various *of*-NPs above. The element *of* is, in fact, treated in many different ways by various scholars.

As mentioned in Section 1.2.1, Napoli (1989: 212), in reference to appraisal *of*-NPs (see Section 2.2.5), indeed argues for a unified treatment of *of*, consistently analysing it as a preposition in a prepositional phrase. Her argument is based on her aim for a more simple representation of grammar, which, however, does not reflect the multifaceted nature of *of*. Keizer (2007: 108), on the other hand, analyses the *of* in the same type of *of*-NPs as part of a complex modifier rather than a single element. Thus, *fool of a* in example (2-41) above, here repeated as (2-59), is treated as a whole modifier phrase (MP) akin to the adjective *foolish*.

(2-59) a fool of a doctor (Keizer 2007: 108)

What is more, in yet again the same type of *of*-NPs, den Dikken (2006: 164–165) calls *of* a ‘nominal copula’, reminiscent of the verbal copula *to be*. In example (2-59), this function can be illustrated by its paraphrase *the doctor is a fool*. Thus, even within just one type of *of*-NP there are three different ways to analyse the element *of*.

In addition, other accounts have taken further, different approaches to the phenomenon. For example, in relation to appositions such as *the city of Rome*, Keizer (2007: 82) calls *of* a ‘linking element’. As shown in Section 2.2.6.2 above, on the other hand, Fawcett (2007) treats *of* as a ‘selector’ in all of his ten different determiners. Furthermore, Halliday & Matthiessen (2014: 341) call it a ‘structure marker’ in most typical cases of *of*-NPs (also see Martin 1992: 133).

That *of* is analysed in so many different ways is not surprising, given its appearance in a multitude of expressions, including many different kinds of *of*-NPs. Indeed, Lindstromberg (1997: 195–201) offers a list of its various occurrences: It appears in relationships of belonging, in part/whole relationships, with quantifiers and qualifiers, with relational nouns, and many more.²⁶ However, this study aims for a representation of *of*-NPs that is both unified and simple, but also incorporates all instances of *of*-NPs, both core and idiosyncratic. Hence, in this analysis, *of* will invariably be called a ‘relator’ as its function—albeit to various different effects—is

²⁶ The diverse uses and functions of *of*, within a multitude of nominal and verbal constructions and across different text genres, have also recently been documented by Pace-Sigge (2015).

to relate the two linguistic units in an *of*-NP with one another, i.e. the one preceding and the one following *of*. More on this relationship between these two entities is given in Chapter 3.

2.4 Conclusion: Motivating a semantic approach to *of*-NPs

This chapter has summarised and reviewed the literature on *of*-NPs so far in connection with the notion of headedness. It has shown that most literature on *of*-NPs bases their analysis on this notion, discussing the expressions' internal structure, or relating them to other grammatical phenomena such as grammaticalisation, postnominal modification or genitive clusters. This chapter has, however, also discussed the problematic nature of headedness in relation to English *of*-NPs. On the one hand, the seven head features of Zwicky (1984, 1993) have been revealed to be contradictory and unsatisfactory in identifying the head of an *of*-NP. On the other, the sections on the individual types of *of*-NPs have shown there to be disagreement between different scholars as to the expressions' internal structure. Hence, this chapter has identified headedness as a problematic concept.

In addition, it has been shown that most accounts of *of*-NPs either only mention them in passing (Section 2.2.1), or focus on one type of *of*-NP only (Sections 2.2.2 to 2.2.5). While there are some accounts that do capture the phenomenon as a whole (Section 2.2.6), they are either still concerned with the notion of headedness, or they review the different types of *of*-NPs in separate chapters and thus still treat them as individual phenomena (e.g. Keizer 2007). What is more, as discussed in Section 1.2.1, there has been a tendency to disregard idiosyncratic instances of the phenomenon in favour of simplified and unified structural accounts based on core examples. As a result of these two tendencies, the nature of *of*-NPs as one whole, composite phenomenon has been underrepresented in the literature so far.

Therefore, this study is taking a different approach to the phenomenon of *of*-NPs. With a novel semantic approach based on Conceptual Blending Theory and Construction Grammar—which is introduced in Chapter 3—this study offers a perspective on the complex and diverse nature of the phenomenon of *of*-NPs as a whole, incorporating all types of *of*-NPs, whether they be core or idiosyncratic examples. In order to uncover and examine new and different aspects of the phenomenon, this study backgrounds the notion of headedness which has been the

primary focus of previous literature. This is not to say that the concept of headedness and the internal structure of *of*-NPs should be abandoned altogether. Rather, the novel view of the multifaceted and diverse nature of *of*-NPs can be used to complement the findings of structural, head-driven approaches.

3 A semantic approach to English *of*-NPs

As established in Chapter 2, this study moves away from the problematic concept of headedness and thus away from a structurally oriented approach to English *of*-NPs. Rather, this study takes a semantic approach which focuses on the different meanings and functions of the various types of the phenomenon. This novel, semantic approach to *of*-NPs is presented in this chapter.

As outlined in Section 1.3, one of the main aims of this study is to capture the diverse nature of the phenomenon of *of*-NPs, including all its different types as well as both core and idiosyncratic examples. In support of this, the current chapter aims to develop and present a theoretical framework that allows for all *of*-NPs to be incorporated and united within the same study. This novel approach to English *of*-NPs constitutes Step 3 in the extended data cycle (see Section 1.4.2) as is highlighted in red in Figure 3-1.

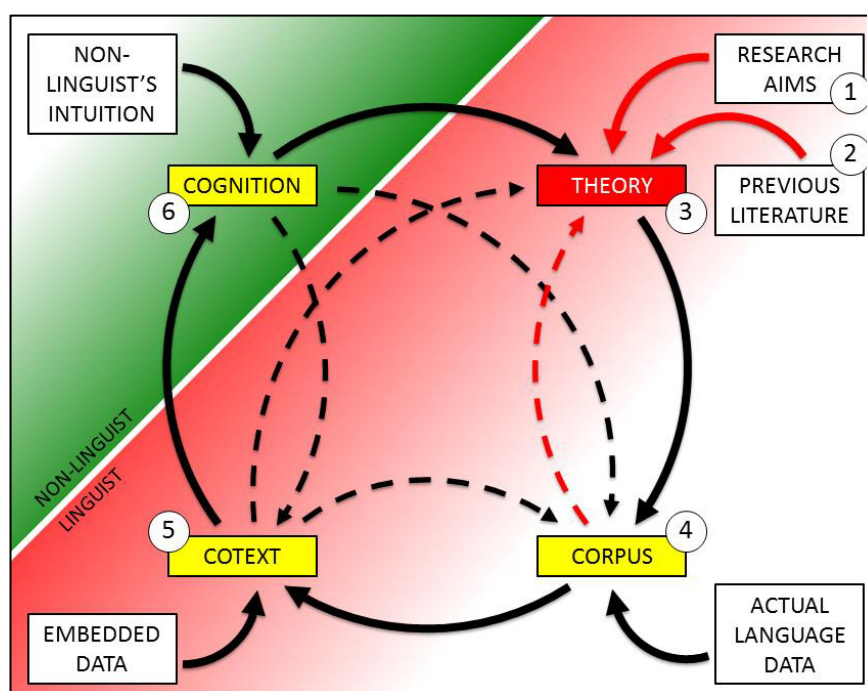


Figure 3-1: The transition from Step 2 to Step 3 in the extended data cycle

As is illustrated by the red, dashed arrow in Figure 3-1, this theoretical account is not just based on the review of previous literature and the research aims of the current study, but has also been influenced by the corpus approach to be introduced in Chapter

4.²⁷ In order to examine *of*-NPs from as neutral a perspective as possible, a large collection of them—representative of both core and idiosyncratic examples and their frequencies—were first analysed within a language corpus, through which the phenomenon's diversity became apparent. Additionally, examining so many different *of*-NPs, made it possible to identify what all of them had in common. What is more, it became clear that a theoretical framework able to account for core and idiosyncratic instances alike needed to be based on this common denominator. Specifically, the common feature shared by all *of*-NPs involves the novel concept of 'conceptual entities', which is introduced in Section 3.1. Subsequently, Section 3.2 then discusses how the various types of *of*-NPs differ from one another with their common denominator remaining constant. This discussion introduces the notions of Conceptual Blending Theory and Construction Grammar with which—as will be shown—the diversity of *of*-NPs can be captured within the same overarching theoretical framework. In relation to this new approach, Section 3.3 adds a brief note on idiomatic *of*-NPs and how they are analysed within this study. Finally, Section 3.4 offers a conclusion to this chapter, and establishes the theoretical approach to *of*-NPs as the foundation in light of which the remaining approaches in Chapters 4 to 6 are presented.

3.1 The common denominator of *of*-NPs: The three conceptual entities

As introduced above, the first step towards an approach that can account for all the different types of *of*-NPs is to look at a representative sample of *of*-NPs and identify which aspect they all share. As is described in more detail in Chapter 4, this was achieved by manually categorising 2,037 *of*-NPs that had been extracted from the British National Corpus. By analysing such a large number of *of*-NPs, it was possible to identify their common denominator. As introduced in Section 1.1, the most obvious feature all *of*-NPs have in common is the item *of* at their structural midpoint. Section 2.3 then established the *of* in *of*-NPs as a relator which relates two linguistic units with one another, namely the linguistic unit preceding *of* and the one following it.²⁸ In other words, each *of*-NP consists of the relator *of* at its structural midpoint which is preceded

²⁷ Also see Chapter 7 for a discussion on how the four approaches informed one another.

²⁸ Also see Radden & Dirven (2007: 159) who mention this role of *of* relating two entities with one another in their discussion on the intrinsic relationship in *of*-NPs such as *the end of the tunnel* which constitutes a part/whole relation, or *the issue of unemployment* which is seen as an identifying relation.

and followed by a ‘slot’ that can each be filled by a linguistic unit. These two units are the second feature shared by all *of*-NPs. For illustration purposes, consider the invented *of*-NP in (3-1):

(3-1) a box of kittens

In this example, the relator *of* is preceded by the linguistic unit *a box* and followed by the unit *kittens*. Each of these linguistic units expresses a mental construct which is “created, stored, and retrieved in the minds of the [language users]” but does not necessarily have a real-world referent (Rijkhoff 2004: 27).²⁹ In (3-1), *a box* conveys the concept of a container and is marked for indefiniteness, while *kittens* refers to a mental construct of a plurality of furry, young and potentially cute felines. A language user of English will have an understanding and mental concept of what the two linguistic entities *a box* and *kittens* mean (see the Semantic Triangle of Ogden 1923).

Both *a box* and *kittens* are clear nominal entities. However, as addressed in Section 1.1, these slots to either side of the relator *of* can also be filled by non-nominal entities that express quantity or a whole situation. In each case, however, a language user will have a mental concept of this entity, be that a quantity, situation or nominal entity. Therefore, these entities are henceforth referred to as ‘conceptual entities’. Conceptual entities (also ConEn) are defined as the linguistic units to either side of an *of*-NP that express a mental concept of some kind. Consider the following three examples taken from the corpus dataset (see Chapter 4):

(3-2) his kingdom of Avalon <1404>

(3-3) the very first race of the 1982 season <986>

(3-4) the sounds of a dustbin lid being replaced <1430>

In (3-2), the leftward slot to the relator *of* is filled by the first, leftward conceptual entity (henceforth ConEn1) *his kingdom*. It consists of the noun *kingdom*, but also expresses possession by the means of the determiner *his*. The second, rightward conceptual entity (henceforth ConEn2), on the other hand, is expressed by the single proper noun *Avalon*. In (3-3), ConEn1 constitutes the whole expression *the very first race*. Thus, it includes the noun *race*, but also the definite determiner *the* and the premodifier *very first*. As such, ConEn1 expresses a complex concept, the meaning of

²⁹ This idea of linguistic units expressing mental constructions rather than directly referring to real-world entities, goes back to the Semantic Triangle of Ogden (1923).

which is expressed compositionally by various elements. Similarly, ConEn2 in (3-4)—also see example (1-21) in Chapter 1—expresses a whole situation where a dustbin lid is being replaced. Thus, it is important to note that the term ‘conceptual entity’ is used to refer to the whole linguistic unit to either side of the relator *of* and the respective mental construct they represent. For the purposes of this study, the individual conceptual entities will not be split up into their separate elements. Instead, the focus will lie on the meaning relationship *between* the conceptual entities.

Indeed, each *of*-NP also features a third conceptual entity, which emerges when the two conceptual entities preceding and following the relator *of* are brought into relation with one another. This third conceptual entity (henceforth ConEn3) thus expresses the mental construct of the *of*-NP as a whole.

In example (3-1) above, the first conceptual entity is the one preceding the relator *of*, i.e. *a box*. ConEn2 is expressed by what follows the relator *of*, i.e. *kittens*. Finally, ConEn3 comes into being when ConEn1 and ConEn2 are brought into relation by the relator *of*. ConEn3 thus captures the meaning of the overall *of*-NP including the meaning of ConEn1 and ConEn2. In (3-1), this meaning would correspond to ‘a box that *contains* kittens’. The individual meanings or mental constructs of these three conceptual entities in *a box of kittens* are illustrated in Figure 3-2:

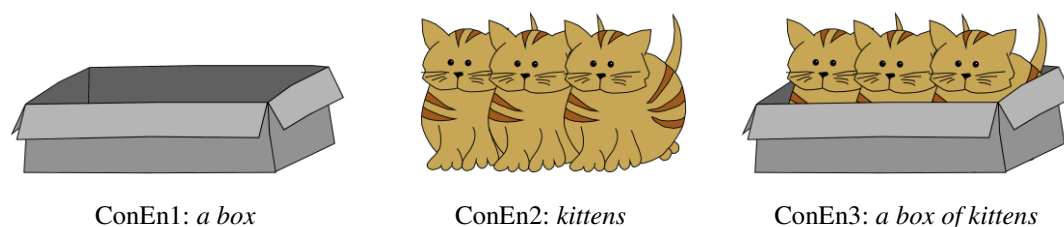


Figure 3-2: The three conceptual entities in *a box of kittens*

Thus, it has been shown that each *of*-NP consists of three conceptual entities. These conceptual entities can express concrete ideas but also more abstract concepts such as quantity or whole situations. No matter how complex these concepts are, however, in each *of*-NP, the three conceptual entities are aligned in the same way as displayed in Figure 3-3:

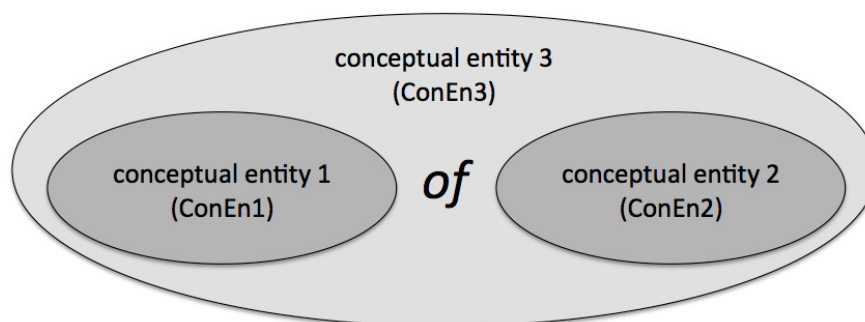


Figure 3-3: The structural alignment of the three conceptual entities

Hence, any *of*-NP contains two slots for a conceptual entity, namely one preceding and one following *of* and together they make up a third conceptual entity, ConEn3. This common denominator, the structural alignment of the three conceptual entities, unites all types of *of*-NPs. Taking this common denominator as the theoretical foundation, it becomes possible to build a framework which incorporates all the different types of *of*-NPs. Yet, such a framework also needs to be able to allow for the differences between the various *of*-NPs. In other words, if the structural alignment of the three conceptual entities is the same in all *of*-NPs, how are they different from one another to result in the variety of *of*-NP types encountered in Chapter 2 (also see Chapter 4)? This question is addressed in Section 3.2 which introduces Conceptual Blending Theory and Construction Grammar into the framework.

3.2 Differentiating between different types of *of*-NPs

As a result of the corpus analysis in Chapter 4, manually analysing 2,037 *of*-NPs, it became clear that the answer to how the various *of*-NPs differentiate from one another lies in the meaning relationship between ConEn1 and ConEn2. For example, in (3-1), the conceptual entities *a box* and *kittens* are related such that the former expresses a quantity of the latter. As a result, the overall meaning of ConEn3 is ‘a box that *contains* kittens’. This meaning relationship between ConEn1 and ConEn2 differs from one type of *of*-NP to another. For example, *the works of Shakespeare* is not to be interpreted as ‘the works that *contain* Shakespeare’. Rather, the meaning relationship between ConEn1 and ConEn2 is such that ‘the works were *produced by* Shakespeare’. Thus, if the difference between one type of *of*-NP and another lies in the meaning relationship between their conceptual entities, then this meaning relationship needs to be explored in more detail. In the following, Section 3.2.1 addresses the question of how the different meaning relationships between the conceptual entities come to be. This

discussion is embedded within Conceptual Blending Theory, which explains how meanings from two input spaces can be merged to create a third, more complex, emergent meaning. Section 3.2.2, then, discusses how these different meaning relationships can be stored and accessed by language users. Making recourse to the framework of Construction Grammar, this section establishes the different types of *of*-NPs as *of*-NP constructions.

3.2.1 Conceptual blending: The meaning relationship in *of*-NPs

As established above, the difference between various types of *of*-NPs lies in the different meaning relationships between the conceptual entities. In example (3-1) above, ConEn1 *a box* is interpreted as a quantity of ConEn2 *kittens*, which results in the overall meaning of ‘a box that *contains* kittens’ in ConEn3. However, neither of the two initial conceptual entities conveys a meaning of quantity when found on their own. Only in relation with *of* does this meaning of quantity emerge. The question of how two conceptual entities combine to create a new, emergent meaning goes back to Boden (1994: 525):

How can two ideas be merged to produce a new structure, which shows the influence of both ancestor ideas without being a mere “cut-and-paste” combination? (as cited in Fauconnier & Turner 2003: 17)

The answer to this question—and thus a theory to explain the meaning relationship between ConEn1 and ConEn2—is offered by the notion of ‘conceptual blending’. As recorded by Fauconnier & Lakoff (2009: 394–396), the concept of ‘conceptual blending’ arose from work on mental spaces in 1977 in combination with the conceptual metaphor theory (see Lakoff & Johnson 2003), which led to Fauconnier & Turner’s seminal work on Conceptual Blending Theory, *The Way We Think* (2003). According to them, ‘conceptual blending’ is a basic process prevalent in even the simplest kind of human thought (see Fauconnier & Turner 2003: 18). Mithen (1996) even states that the ability of ‘conceptual fluidity’—which is what he calls ‘conceptual blending’—has played a crucial role in the sudden jump in evolution of the human species (see Fauconnier & Turner 2003: 27).

In conceptual blending, then, “structure from two input spaces is projected to a separate space, the ‘blend’. The blend inherits partial structure from the input spaces, and has emergent structure of its own” (Fauconnier & Turner 1996: 113; also see

Coulson & Fauconnier 1999: 144–147). In other words, in conceptual blending, the meanings of two concepts are merged, or mapped onto one another, to create a new concept with a meaning of its own, the emergent structure. Fauconnier & Turner (2003) give numerous detailed examples to illustrate this phenomenon. In the following, however, only their example of blending within *of*-NPs shall be discussed.

In *of*-NPs, the two conceptual entities, ConEn1 and ConEn2, are merged to create a third conceptual entity, the blend, ConEn3. In fact, albeit using different terminology, this is supported by Fauconnier & Turner (2003: 145), who state the following:

But what about the frequent cases in which the word “of” seems to mean “a part of”, as in “the door of the car” or “the top of the building”? Indeed, these cases are also straightforward instances of the general mapping scheme. The word “top” does not in itself denote a part of a building. Rather, it is part of a more general frame—roughly referring to things that have vertical orientations and are bound in space.

This general frame of ‘a vertical orientation that is bound in space’—which the concept of ‘top’ stems from—and how it blends with the second conceptual entity, is illustrated by Figure 3-4 adopted from Fauconnier & Turner (2003: 146):

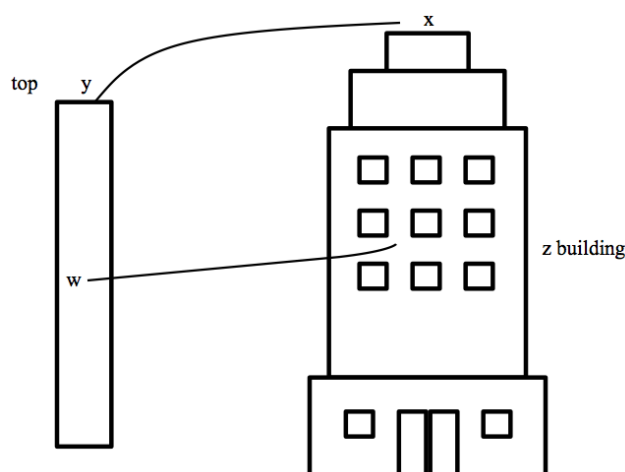


Figure 3-4: The conceptual blend in *the top of the building*

Fauconnier & Turner (2003: 139–168) discuss *of*-NPs in the framework of what they call the XYZ construction as in ‘X IS THE Y OF Z’ (also see Turner 1987), such as *necessity is the mother of invention* or *John is the brother of the bride*. Thus, in Figure 3-4 above, ‘x’ refers to the whole entity that is being identified (e.g. *This* in *This is the top of the building*). Because ‘x’ constitutes the ‘whole’ entity, it can also be equalled

with ConEn3, i.e. *the top of the building*. The letters ‘y’ and ‘z’, on the other hand, represent ConEn1 and ConEn2 respectively. Specifically, ‘y’ refers to an endpoint in the frame of ‘vertical orientation’ called ‘w’, which is then blended with the ‘z’ frame of ‘building’ to create the blend *the top of the building*. Hence, expressions such as *the door of the car* or *the top of the building*—and, by that means, any other *of*-NP as well—are clear instances of conceptual blending where two conceptual entities are blended with one another to form a third, more complex entity. ConEn3 thus takes semantic input from both ConEn1 and ConEn2.

In addition, however, the blend, ConEn3, also has meaning which is not part of either input frame. Indeed, as explained by Fauconnier & Turner (2003: 48), “[b]lending can compose elements from the input spaces to provide relations that do not exist in the separate inputs” (also see Coulson & Oakley 2000: 180). This becomes evident when revisiting the expression *a box of kittens*. As expressed above, the individual entities ConEn1 and ConEn2 refer to the concepts of ‘a box’ and ‘kittens’ respectively. Once they are blended together to form ConEn3 a new meaning emerges, namely ‘a box that *contains* kittens’. Thus, in ConEn3, the first conceptual entity ‘a box’ acquires a quantificational meaning expressing a rough quantity of the second conceptual entity ‘kittens’; it informs us that there is not only just one kitten, nor is there a truckful of kittens. Instead, there are as many kittens as would comfortably fit into a box of a given size. This quantificational meaning is not part of the isolated meaning of ‘a box’ nor of ‘kittens’, but emerges from the conceptual blending of ConEn1 with ConEn2 by the relator *of*. Hence, in *of*-NPs, through blending, ConEn1 enters a ‘relationship’ with ConEn2, which, in doing so, creates additional meaning. In the following, Section 3.2.2 establishes these different meaning relationships as part of different *of*-NP constructions within the framework of Construction Grammar.

3.2.2 Construction Grammar: Storing meaning relationships as constructions

In the following, the framework of Construction Grammar³⁰ (henceforth also CxG) will be related to the phenomenon of *of*-NPs. First, Section 3.2.2.1 illustrates how CxG

³⁰ Ever since Construction Grammar first emerged in the 1980s, it has evolved into a number of different sub-frameworks (see Hoffmann & Trousdale (2013b) for a collection of introductions), each concentrating on a different aspect of CxG, taking slightly different approaches. Examples are the field of ‘Radical Construction Grammar’ (Croft 2001, 2013), which approaches grammar based on almost no pre-existent categories; ‘Fluid Construction Grammar’ (Steels 2013) and ‘Embodied Construction Grammar’ (Bergen & Chang 2013) both of which are computational implementations of CxG; or

aligns with this study's aims and how it is a suitable framework for the semantic approach. This is achieved by presenting the framework's basic principle of constructions, and by discussing its aim to account for both core and idiosyncratic examples of a grammatical phenomenon and its notion of 'surface structure' as opposed to 'deep structure' which allows the concept of headedness to be backgrounded. Secondly, Section 3.2.2.2 relates these CxG principles to the phenomenon of *of*-NPs and the notion of conceptual blending introduced above.

3.2.2.1 The relevant principles of Construction Grammar

Construction Grammar is centred on the idea that grammatical patterns, such as the different types of *of*-NPs, are readily available form-meaning pairings called 'constructions'. This idea of 'constructions' is based on the notion of the Saussurean sign (see Hoffmann & Trousdale 2013a: 1). In his posthumously published article (de Saussure 2006 [1916]: 65–70), Saussure introduced the idea of lexical items as 'signs', consisting of a signifier (*signifiant*) and a signified (*signifié*), two sides of the same coin. The sign *tree*, for example, is made up of its form (primarily its phonemic form /tri:/, or its graphemic form <tree>) and its meaning, a mental construct of a tree in a language user's mind. In other words, signs are form-meaning pairings. Construction Grammar extends this principle to grammatical patterns and shows that they are form-meaning pairings as well. This extended notion of the Saussurean sign is called 'construction' (see Hoffmann & Trousdale 2013a). Constructions can thus be words and grammatical patterns,³¹ and together they form a lexicon-syntax continuum, a mental lexicon also known as the 'constructicon' (Fillmore 1988; also see Goldberg 2003: 223; and Hoffmann & Trousdale 2013a: 1). This constructicon contains mental representations of lexemes and grammatical patterns alike.

The most frequent example of such a grammatical form-meaning pairing in CxG is the ditransitive argument structure construction (see Goldberg 1989, 1995, 2006, 2013). Goldberg (1989: 79) illustrates that in ditransitives "the skeletal syntax, Subj Verb Obj Obj" is coupled with the meaning of "transfer of a physical object to a

representatives from a cognitive point of view in 'Cognitive Grammar' (Langacker 2007; Broccias 2013) and 'Cognitive Construction Grammar' (Langacker 2009; Boas 2013). While these accounts and the scholars associated with them all differ based on their focus, they all share the same underlying principles of Construction Grammar. Note that the study at hand solely relies on this shared foundation of CxG and is thus not affiliated to a particular one of its sub-frameworks.

³¹ Note that while the term 'construction' is used to refer to both words and grammatical patterns (i.e. lexical constructions and grammatical constructions), it is here used to refer to grammatical patterns only due to the research's focus on syntax rather than lexis.

recipient, i.e., the subject agentively causes the second object to be transferred to the first object” (Goldberg 1989: 82). A classic example of such a ditransitive structure frequently occurs with the verb *to give* as in sentence (3-5):

(3-5) Jo gave Bill an apple. (Goldberg 1989: 82)

In this sentence it is the subject *Jo* who causes the second object *an apple* to be transferred to the first object *Bill*. Even though the verb *to give* is very strongly associated with a motion of transfer (as is discussed below, this association is usage based), the meaning of ‘transfer of one object to another’ is inherently tied to the ditransitive argument structure construction, i.e. the grammatical pattern, rather than the verb itself. As a result, it also becomes possible for verbs to appear in this construction which are not usually associated with a meaning of transfer. For example, see the verb *to kick*, a prototypical transitive verb in (3-6) to (3-8) taken from Goldberg (2001: 504):

(3-6) Pat kicked the wall.

(3-7) Pat kicked the football into the stadium.

(3-8) Pat kicked Bob the football.

The verb *to kick* usually appears in transitive constructions such as (3-6), but can also be used in ‘caused motion constructions’ (see Michaelis 2013: 149) such as (3-7). In addition, it can be used in ditransitive constructions (3-8), even though *to kick* does not have inherent meaning of ‘transfer from one object to another’ associated with it. Yet in (3-8), the expression *Pat kicked Bob the football* still expresses this meaning of ‘transfer’. This is because that meaning is tied to the ditransitive construction, rather than the verb itself.³² Thus, it becomes evident that grammatical patterns are form-meaning pairings as well. The meaning attached to these patterns is henceforth also referred to as the ‘constructional meaning’ of an expression.

Having introduced the most basic principle of CxG, i.e. constructions, this framework is applied to *of*-NPs within this study. While most work on CxG has focused on different kinds of argument structure constructions, there are also approaches which explore the English noun phrase within a constructional framework. Hollmann (2013: 502–503), for example, touches on the definite NP construction in

³² This process, when a verb is put into an unfamiliar structural environment, is also known as ‘augmentation’ (see Michaelis 2006: 75).

view of cognitive sociolinguistics. Jackendoff (2013: 82), on the other hand, briefly discusses N of NP constructions and identifies them as problematic due to the conundrum of left- or right-headedness, and ten Wolde (2014) works on the appraisal *of*-NPs introduced in Section 2.2.5 from a constructional perspective. To my knowledge, however, extensive work on noun phrase constructions is still lacking within CxG. Specifically, so far, the overall phenomenon of the different kinds of *of*-NP constructions has not been examined. However, the framework of CxG aligns with this study's approach to *of*-NPs in two significant ways: the inclusion of idiosyncratic examples of a grammatical phenomenon and the backgrounding of the notion of headedness by the means of focusing on a phenomenon's surface structure.

CxG emerged in the 1980s and 1990s when Paul Kay, George Lakoff, and Charles Fillmore started to direct their research at 'noncanonical', idiosyncratic grammatical phenomena. This new direction in grammatical research was motivated by the recognition that the transformational rules established in transformational grammar cannot account for all instances of a phenomenon (see Section 1.2.1). Recognising such idiosyncratic instances as a grammatical construction, i.e. a distinct form-meaning pairing, of their own which can be described in constructional but not transformational terms, Fillmore (1985: 84) states:

The people who decide on such things would surely declare that the phenomena I have been describing belong to the "periphery" of grammar and not its "core", and they might be quick to tell us that within the "core", displacement structures are equivalently described constructionally or transformationally, the two being "mere notational variants" of each other. I would like to suggest that since in the "peripheral" cases the "constructional" account has, as I see it, a number of advantages, perhaps a constructional treatment should be preferred throughout. This would at least make it less necessary to believe that there is a major discontinuity between Core Grammar and The Periphery.

Hence, CxG has always striven to account for both 'core' and 'peripheral' examples of a phenomenon, in order to offer a representation that incorporates the full potential of the phenomenon's diversity (also see Goldberg 2003: 219; 2013: 17; Hoffmann & Trousdale 2013a: 3). This coincides with this study's aim to represent all types of English *of*-NPs, be they core or idiosyncratic examples.

What is more, while CxG allows idiosyncratic examples to be included in grammatical analysis, it also allows for the problematic notion of headedness to be

backgrounded, as is done with *of*-NPs within this study (see Section 2.1 above). Because both the form and meaning of a grammatical construction are stored in our mental ‘constructicon’ and can be retrieved as readily available items, their structure no longer requires a generative or transformational interpretation (see Hoffmann & Trousdale 2013a: 3).³³ Thus, the deep-structure analysis, including all the movement rules, empty gaps and X-bar elements, common to generative and transformational linguistics (see for example Burton-Roberts 1997; or Chomsky 2002), is no longer applicable. Instead, CxG employs a monostratal ‘what you see is what you get’ structure (see Hurford 2012: 356; or Bybee 2013: 51), also called ‘surface-structure’ (Goldberg 2013: 15). Hence, from a constructional viewpoint, *of*-NPs and their individual meaning relationships can be analysed without focusing on their left- or right-headed nature in their deep-structure. Instead, *of*-NPs can be viewed as surface-structure constructions, consisting of the central relator *of* with two slots for a conceptual entity on either side (Figure 3-3 above). Finally, CxG also allows for the incorporation of Conceptual Blending Theory and the meaning relationship between ConEn1 and ConEn2 introduced above. This is discussed in more detail in Section 3.2.2.2.

3.2.2.2 *Of-NP constructions: The constructional meaning in the blend*

So far, Section 3.1 introduced the components that all *of*-NPs consist of and identified them as ‘conceptual entities’ which are connected by the relator *of*. Section 3.2.1, then, showed how these conceptual entities, ConEn1 and ConEn2, are put into a meaning relationship with the relator *of* in the middle and how their meanings are blended together to create the meaning of the overall expression, i.e. the *of*-NP. Subsequently, the previous section, Section 3.2.2.1, introduced CxG and showed how this framework’s underlying principles fit in with the present analysis of *of*-NPs. Finally, based on these previous sections, this current section establishes how the theory of conceptual blending in *of*-NPs ties in with CxG. Specifically, it shows that the meaning relationship between ConEn1 and ConEn2 is akin to an *of*-NP’s constructional meaning, and that the different types of *of*-NPs constitute different *of*-NP

³³ As pointed out by Hoffmann & Trousdale (2013a: 3), “[t]his view of grammar as a mental network of constructions has recently received great empirical support by independent research”. They mention areas such as first language acquisition (Diessel 2013), second language acquisition (Ellis 2013), psycholinguistics (Bencini 2013), as well as neurolinguistics (Pulvermüller, Cappelle & Shtyrov 2013).

constructions, i.e. different form-meaning pairings which are stored as individual readily available items in our constructicon.

As introduced in Section 3.2.1, in *of*-NPs the two conceptual entities ConEn1 and ConEn2 are blended together with the relator *of* to create the more complex conceptual entity ConEn3. From this blend emerges a new meaning, i.e. the meaning relationship between ConEn1 and ConEn2, which adds to the overall meaning of ConEn3. It is this meaning relationship which constitutes the underlying constructional meaning in *of*-NPs. Indeed, Fauconnier & Turner (2003: 146–147) mention that the meaning that emerges from blends can become fixed and can be reused repeatedly:

Is there any regularity to the way that blends compose, or do we have to invent new, idiosyncratic mapping schemes for every compound network? Rather amazingly, no matter how unpredictable creative blending is at every stage, and no matter how various its products seem [...] it can use the same skeletal mapping schemes again and again and combine them in the same simple ways.

It is this regularity, this repeated use (see also Bybee 2013: 50), that leads to the meaning relationship between ConEn1 and ConEn2 to be associated with the structural pattern of *of*-NPs (see Figure 3-3), which in turn leads to the existence of *of*-NP constructions that are stored as individual readily available patterns in the constructicon. Once these form-meaning pairings have been established as items in the constructicon, they can then be used to blend with other, lexical concepts. Mandelblit (2000: 198–199, emphases in original) states:

Syntactic constructions can also serve as integrating frames, allowing the conceptual and linguistic integration of a complex sequence of events into a single schematic event frame (marked by a single syntactic clause construction). The central idea is that simple clause structures can be used linguistically to express complex novel events (see also Kemmer & Verhagen 1994) by *blending* together elements from the event sequence with the simple clause structure [...]. The linguistic blending operation marks a conceptual integration operation in which a rich complex event representation is integrated into a compact event-schema representation.

While Mandelblit (2000) here refers to clause constructions (see also Coulson & Oakley 2000: 190–191), the same concept can be applied to *of*-NPs. A complex event, i.e. a concept consisting of two conceptual entities, can be mapped onto a simple syntactic construction, i.e. the structural pattern CONEN1 *OF* CONEN2 which is paired

with a specific meaning relationship between ConEn1 and ConEn2. In order to illustrate how this amalgamation of lexical and constructional meanings works, consider the meaning relationship between ConEn1 and ConEn2 in *a box of kittens*.

As introduced above, *a box of kittens* consists of the conceptual entities *a box* and *kittens*. These two concepts express the lexical meanings of ConEn1 and ConEn2 respectively. Both of these conceptual entities also enter a relationship with one another. In the case of *a box of kittens*, it is that of *a box* denoting a quantity of *kittens*. This quantificational meaning relationship between *a box* and *kittens* can be captured by CONEN1 QUANTIFIES CONEN2.³⁴ As a consequence, it is the amalgamation of this constructional meaning with the lexical meanings of *a box* and *kittens*, which creates the overall meaning of *a box of kittens* expressed by ConEn3. Hence, the constructional meaning of the *of*-NP construction involved in *a box of kittens* contributes considerably to the overall meaning of the expression.

What is more, *a box of kittens* can also be interpreted to mean something completely different from ‘a box that *contains* kittens’, i.e. the two conceptual entities can be blended in other ways. Indeed, the impact of constructional meaning on the overall meaning of an *of*-NP can be illustrated if we force the same two conceptual entities with the same lexical meaning, in this case *a box* and *kittens*, into a different *of*-NP construction with a different constructional meaning attached to it—i.e. a construction where ConEn1 and ConEn2 are blended together differently, entering a different meaning relationship. For example, within a given context, it is possible to use *a box* and *kittens* within an *of*-NP construction with the meaning relationship CONEN2 QUALIFIES CONEN1 BY MATERIAL³⁵. As a result, the meaning of ConEn3 changes as is illustrated by the two different interpretations in Figure 3-5:

³⁴ As introduced in more detail in Section 4.2 below, this study distinguishes one *of*-NP construction from another by the use of these meaning relationships between the three conceptual entities given in small caps. Furthermore, see Section 4.3.2.3 for a more detailed discussion of this specific type of *of*-NP construction.

³⁵ See Section 4.3.2.2 for a more detailed discussion of this type of *of*-NP construction.

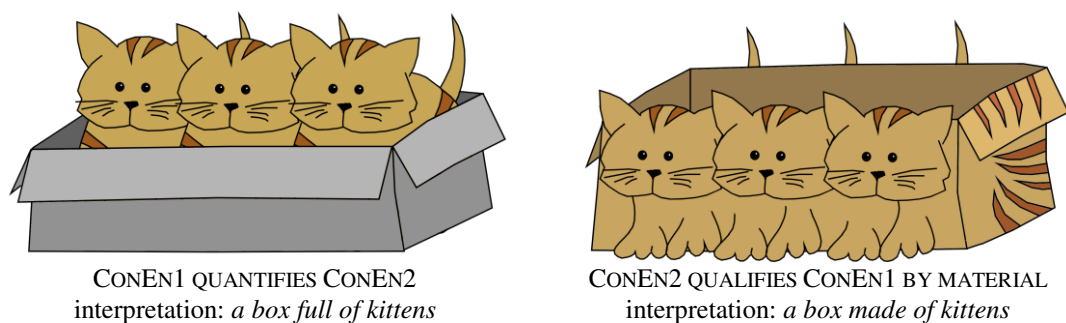


Figure 3-5: The influence of the constructional meaning on the meaning of *a box of kittens*

In Figure 3-5, the first interpretation of *a box of kittens*, as described above, is the common, most instinctive one, where *a box* is seen as a quantity of *kittens*, i.e. how many kittens *are* or *fit* in the box. The second interpretation, on the other hand, is semantically odd and thus less likely to be chosen as the meaning of the expression. It, rather cruelly, forces *kittens* to be interpreted as a quality of *a box*, namely the material of which it is made (compare *a box of wood* or *a box of steel*). For this meaning to be chosen, a specific, fictional context will be required—i.e. a madman building boxes out of kittens—which triggers the possibility of the concept of *kittens* to be reanalysed as a material with which one can build boxes (see Lanneau (2014) for a further discussion of the influence of context on a language user’s interpretation of an expression’s meaning). Thus, while the lexical meanings of both *a box* and *kittens* remain the same in both interpretations, it is the structural pattern’s underlying constructional meaning that causes the overall meaning of ConEn3 to change.

The same difference in relationship between ConEn1 and ConEn2, but with a more realistic meaning, can also be found in the invented examples (3-9) and (3-10), in the former of which the box *contains* chocolate whereas in the latter the bar *consists of* chocolate. In addition, examples (3-11) and (3-12) stand for two further types of *of*-NP construction where either the consumption *is done to* the chocolate,³⁶ or ConEn1 refers to *a subclass* of chocolate.³⁷

- (3-9) the box of chocolate
- (3-10) the bar of chocolate
- (3-11) the consumption of chocolate

³⁶ See Section 4.3.2.4 for a more detailed discussion of this type of *of*-NP construction.

³⁷ See Section 4.3.2.8 for a more detailed discussion of this type of *of*-NP construction.

(3-12) the type of chocolate

What is more, this also explains examples such as *of*-NP (2-21) from Austin (1980: 362) here repeated as (3-13):

(3-13) a mountain of eggs

In this example, ConEn1 *a mountain* inherits the function of a quantifier because it is blended with the quantificational *of*-NP construction CONEN1 QUANTIFIES CONEN2. Thus, these examples illustrate that ConEn1 and ConEn2 can enter different kinds of relationships, i.e. can be blended with different types of *of*-NP constructions that add to the meaning of the whole expression and influence how ConEn1 and ConEn2 are interpreted.

Finally, since there are different possibilities for the two conceptual entities to blend, i.e. since there are different meaning relationships between ConEn1 and ConEn2, there is also a variety of *of*-NP constructions. Croft (2013: 217) states that

[c]onstructions can be described in terms of properties of form and especially meaning. Constructions form categories, and like other categories they may have internal structure (e.g., a prototype and extensions) and the boundaries between constructions may be difficult to define.

In other words, constructions are identified by their structure *as well* as their meaning. If one of them differs, we are dealing with a different construction. In the case of English *of*-NPs, the basic structural alignment between the three conceptual entities and the relator *of* does not change. However, what changes is the meaning relationship between the conceptual entities. Therefore, each new meaning relationship makes for a new type of *of*-NP construction to be stored in the constructicon. In effect, all the different kinds of *of*-NP constructions are form-meaning pairings which share the same basic form but differ in meaning. However, these different *of*-NP types are related to one another: Some of them are more prototypical, while others are more peripheral; some constitute a special subtype of *of*-NP; and yet others are related to one another on a semantic scale. These different types of *of*-NPs, whether prototypical or peripheral, and how they relate to one another is identified in the corpus approach in Chapter 4. Before that, however, Section 3.3 adds a brief note on idiomatic *of*-NPs, to establish how these fit in with Conceptual Blending Theory and the framework of Construction Grammar, and how they are incorporated and dealt with within this study.

3.3 A note on idiomatic *of*-NPs

As illustrated above, constructions like the different types of *of*-NPs are stored as form-meaning pairings in a language user's constructicon by repeated use. The more often a blend is used the stronger its representation in the constructicon. This is explained in more detail by Bybee (2013: 50) with her Usage-Based Model in CxG:

An important characteristic of human language is that the individual units and sequences of units are subject to high levels of repetition. It is repetition that leads to conventionalization of categories and associations, as well as to the automation of sequences. Because some units and sequences are repeated more than others, it has been possible to identify the properties of cognitive representations that depend upon the extent to which they have been accessed for production or perception. Thus, within Usage-Based Theory the study of frequency effects of various sorts has contributed to the understanding of the nature of grammatical organization (Bybee 2007).

Thus, it is the repeated use of a construction that determines its saliency in the constructicon.

Most grammatical constructions are used again and again with changing lexis. For example, in the *of*-NPs in (3-14) to (3-16) taken from the corpus dataset (see Chapter 4) the grammatical construction remains constant with the same meaning relationship between each ConEn1 and ConEn2, but the lexis of the individual conceptual entities change.

(3-14) the abolition of private property <935>

(3-15) the discovery of truth <1012>

(3-16) the forming of dreadlocks <1471>

In all three examples, ConEn2 is passively involved in the process of ConEn1, i.e. private property is abolished, truth is discovered, and dreadlocks are formed.³⁸ However, sometimes, some or all of the lexis of these expressions becomes fixed over time and through repeated use, and thereby becomes an integral part of the construction. As a result, the expressions become partially or completely fixed, i.e. idiomatic. Consider for example the *of*-NPs in (3-17) to (3-20) taken from the corpus dataset:

³⁸ See Section 4.3.2.4 of the corpus analysis for more information on this type of *of*-NP construction.

- (3-17) a lot of people <503>
- (3-18) a kind of savage irony <1809>
- (3-19) show of hands <219>
- (3-20) the House of Lords <640>

In (3-17), it is ConEn1 that is found very frequently as a quantifier in English *of*-NPs, while ConEn2 remains variable. The same is true for (3-18), where *kind* is often found in *of*-NPs of typification but also as a hedging device to express uncertainty about whether the referent is a good representative of ConEn2, e.g. *savage irony* in (3-18).³⁹ Thus, these expressions can be said to be semi-fixed as the individual ConEn1s become associated with the respective *of*-NP construction. In (3-19), on the other hand, both ConEn1 and ConEn2 have become an integral part of the expression. *Show of hands* is an idiomatic expression that is stored in the construction as one ready-made linguistic unit, i.e. with conceptual entities that are fixed (**a show of feet*). Similarly, the *of*-NP in (3-20) constitutes a name for a part of the British parliament and is thus also one fixed unit, which can be retrieved as a whole. Hence, these two latter *of*-NPs have, through consistent use, become completely fixed. What is more, expressions such as *a kind of* have, through grammaticalisation, acquired a different use such that they can now also be used as hedging devices and not just to identify a type of something.

However, it is important to note that despite these expressions' idiomatic nature, they have nonetheless retained their underlying constructional meaning, each of which is associated with a particular type of construction. In (3-17), the quantificational relationship still holds, i.e. ConEn1 *a lot* still expresses a quantity of ConEn2 *people*, even though the former is fixed. In other words, the semi-fixed construction *a lot of ConEn2*, with the constructional meaning *A LOT QUANTIFIES CONEN2*, can be said to be part of the more general *of*-NP construction where CONEN1 QUANTIFIES CONEN2.⁴⁰ Likewise, in (3-18), even though the expression identifies the referent as an untypical example of savage irony, it still expresses the notion of typification. Thus, albeit semi-fixed, (3-18) still contains the underlying constructional meaning of CONEN3 IS A TYPE

³⁹ See Section 2.2.4 for a more detailed discussion of this type of *of*-NP and the relevant, related literature.

⁴⁰ See Section 4.3.2.3 of the corpus analysis for more information on the *of*-NP construction CONEN1 QUANTIFIES CONEN2.

OF CONEN2.⁴¹ Similarly, the idiomatic *of*-NP in (3-19) still consists of the underlying constructional meaning where CONEN2 IS PASSIVELY INVOLVED IN CONEN1,⁴² which is also expressed by the non-idiomatic *of*-NPs in examples (3-14) to (3-16). Finally, the meaning of *the House of Lords* in (3-20) can equally be dissected such that the underlying meaning relationship between the two conceptual entities—namely CONEN2 QUALIFIES CONEN1⁴³—is revealed. Indeed, it can be said that *the house* of the British parliament that is being referred to consists of *Lords*.

Hence, these examples have shown that idiomatic *of*-NPs still contain the meaning relationship between ConEn1 and ConEn2 as part of their meaning. In other words, idiomatic *of*-NPs constitute a semi- or completely fixed instance of a particular type of *of*-NP construction, which aligns with Croft's (2013: 217) above-mentioned statement that constructions "may have internal structure (e.g., a prototype and extensions)". Therefore, within this study, idiomatic *of*-NPs are grouped together with other, non-idiomatic *of*-NPs based on their shared constructional meaning relationship between their conceptual entities. A more detailed analysis of their idiomatic nature, however, is not undertaken within this study, but is left for future research.⁴⁴

3.4 Conclusion

This chapter has established the theoretical basis on which the remaining chapters and their analysis of English *of*-NPs shall be built. Unlike most of the literature on these expressions as presented in Chapter 2, *of*-NPs are here viewed from a semantic rather than structural perspective. Indeed, the different types of *of*-NPs are understood as different types of grammatical constructions with differing meaning relationships between the conceptual entities involved. Furthermore, it has been shown that *of*-NPs consist of two conceptual entities, ConEn1 and ConEn2, which are brought into relation with one another by the means of an *of*-NP construction containing the relator *of*. The lexical meanings of ConEn1 and ConEn2, as well as the constructional meaning of the *of*-NP construction are then blended to form the meaning of the third conceptual entity. This third conceptual entity, ConEn3, constitutes the overall *of*-NP.

⁴¹ See Section 4.3.2.8 of this the corpus analysis for more information on the *of*-NP construction CONEN3 IS A TYPE OF CONEN2.

⁴² See Section 4.3.2.4 of this the corpus analysis for more information on the *of*-NP construction CONEN2 IS PASSIVELY INVOLVED IN CONEN1.

⁴³ See Section 4.3.2.2 of this the corpus analysis for more information on the *of*-NP construction CONEN2 QUALIFIES CONEN1

⁴⁴ For literature on idiomatic expressions and formulaic language, see Wray (2002).

This semantic and constructional approach to *of*-NPs allows for the integration of both core and idiosyncratic examples of the grammatical phenomenon, which has been identified as one of the aims of this study. Furthermore, due to Construction Grammar's focus on surface-structure rather than deep-structure, it becomes possible to background the problematic notion of headedness and focus on other aspects of the phenomenon's nature instead. Finally, the notions of the conceptual entities and the meaning relationship between them also allow for the incorporation of idiomatic *of*-NPs into the same constructional categories as other non-idiomatic expressions.

For the remainder of this study, the different kinds of meaning relationships between the conceptual entities of *of*-NPs will form the basis of analysis for the corpus, cotextual and cognitive approaches in Chapters 4, 5 and 6. First, Chapter 4 presents the different types of *of*-NP constructions as found within the corpus dataset, which have been identified by the means of examining the constructional meanings emerging from the blend between ConEn1 and ConEn2.

4 Types of *of*-NP constructions: A corpus analysis

With a theoretical framework in place that allows for both core and idiosyncratic *of*-NPs, we can now move on to the next stage in the extended data cycle (see Section 1.4.2). For orientational purposes, Figure 4-1 repeats the diagram of the cycle. The current position is marked in red.

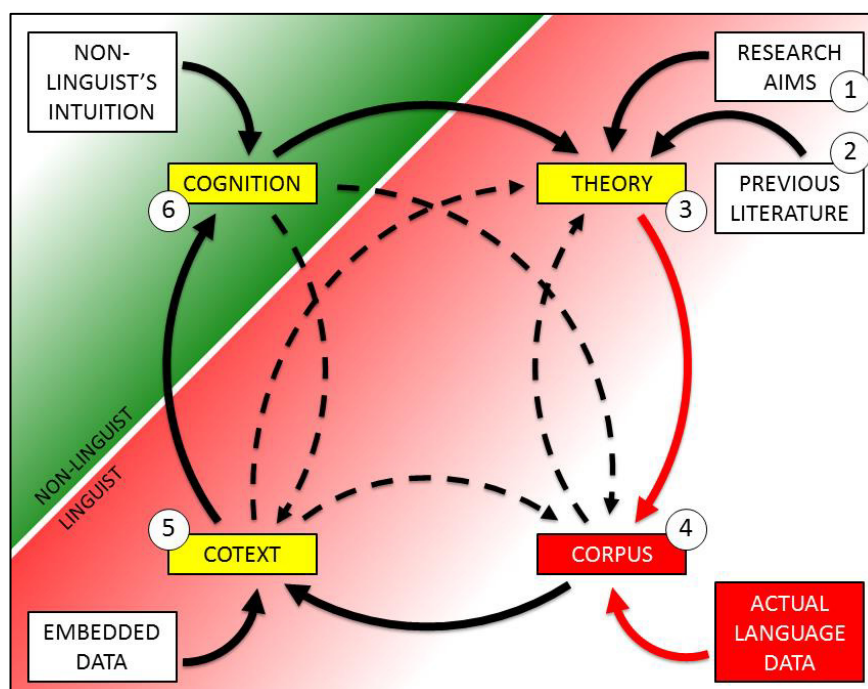


Figure 4-1: The transition from Step 3 to Step 4 in the extended data cycle

As has been identified in Section 1.3, the main aim of this study is to provide an account of English *of*-NPs that captures their multifaceted nature by including core as well as idiosyncratic types of *of*-NPs. This is done by examining and combining different aspects of *of*-NPs such as their diversity, their frequency, their textual function(s) and how the phenomenon is interpreted by non-experts. The current chapter works in support of this main aim by providing research on and a discussion of the diversity of English *of*-NPs, as well as the frequencies of the various types. As discussed in Section 1.2.1 and Chapter 2, previous literature has so far mostly focused on individual types of *of*-NPs in isolation, and idiosyncratic examples of *of*-NPs have been underrepresented. Hence, this chapter sheds light on the varied nature of the phenomenon of English *of*-NPs. Specifically, it aims to include both core and

idiosyncratic examples within the description of *of*-NPs, and to identify the frequencies of these different types.

This aim of capturing the diversity of *of*-NPs is achieved by looking at a large, representative sample of written English *of*-NPs extracted from the British National Corpus (henceforth also BNC)—as previously noted in Chapter 1, for reasons of scope this study only investigates written language, and the nature of *of*-NPs in spoken discourse is left for future research. The written *of*-NPs extracted from the BNC were analysed within the theoretical framework presented in the previous chapter, searching for the constructional meaning relationship between each *of*-NP's ConEn1 and ConEn2.⁴⁵ Based on the different meaning relationships found in the corpus, the *of*-NPs were then grouped into different categories whose individual nature and frequency are presented in a detailed discussion within this chapter.

Thus, in the following, Section 4.1 outlines the methodology involved in extracting the *of*-NPs from the BNC. First, it briefly discusses the motivations for using the BNC as the data source, introduces the online concordancer Sketch Engine which was used to compile the data, and presents the corpus query with which all instances of *of*-NPs were extracted from the BNC. Subsequently, the methodology involved in choosing a representative sample of 2,000 *of*-NPs is presented as well as an outline of the dataset. Section 4.2, then, discusses how the dataset of *of*-NPs was analysed and manually categorised into different types of *of*-NPs by considering each expression's meaning relationship between ConEn1 and ConEn2. The results of this analysis are then presented in Section 4.3, which first introduces the basic statistics of the dataset, explaining how the final number of 2,037 *of*-NPs analysed was reached and why some concordance lines had to be excluded from analysis. It then moves on to present the nine main categories and 31 subcategories of *of*-NPs found within the corpus dataset. Thirdly, Section 4.3 also provides a brief discussion of the phenomenon of *of*-NP clusters. Finally, Section 4.4 offers an overview of all types of *of*-NP constructions found as well as a discussion of the new insights and benefits this corpus analysis has yielded.

⁴⁵ Note that, as previously mentioned, the theoretical framework of Chapter 3 actually grew out of this current corpus approach.

4.1 The corpus methodology in gathering the data

In the following, Section 4.1.1 first discusses the reasoning and processes involved in compiling the corpus dataset. It discusses the motivations in choosing the BNC as the data source; presents the online concordancer Sketch Engine with which the data was extracted; introduces some corpus terminology needed for the remainder of this study; presents the Sketch Engine corpus query used to gather all *of*-NPs from the BNC; and elaborates on how a random sample of *of*-NPs was chosen from the complete BNC results. Secondly, Section 4.1.2 presents the outline of the final corpus dataset as attached in Appendix A.

4.1.1 Extracting *of*-NPs from the BNC with Sketch Engine

4.1.1.1 *The British National Corpus*

While there is a great variety of language corpora, such as the enTenTen corpora, the corpus chosen as data source for the present study on *of*-NPs is the British National Corpus. Although the enTenTen corpora surpass the BNC in size, they have been disfavoured due to their automatic sourcing from the World Wide Web (see Kilgariff & Rychlý 2013b). Since this study only focuses on *of*-NPs in written language, it was vital to ensure that all data used had originated from written language, information which is not provided by the enTenTen corpora. The BNC, on the other hand, proved more suitable. On its website (BNC 2010b), the corpus is described as

a 100 million word collection of samples of written and spoken language from a wide range of sources, designed to represent a wide cross-section of British English from the later part of the 20th century, both spoken and written.

Thus, as opposed to the enTenTen corpora, the BNC distinguishes clearly between written and spoken data, and “[i]t includes many different styles and varieties, and is not limited to any particular subject field, genre or register” (BNC 2010b). Indeed, in its written part, it claims to contain

extracts from regional and national newspapers, specialist periodicals and journals for all ages and interests, academic books and popular fiction, published and unpublished letters and memoranda, school and university essays, among many other kinds of text (BNC 2010b).

This wide variety of texts is a valuable feature for the finding of a representative sample of *of*-NPs. Since it was unknown whether *of*-NPs were common to a specific text genre only, or whether certain kinds of *of*-NPs were more typical in some text genres than others, it was essential not to restrict the data search to just one genre.

In addition, the BNC has been ‘part-of-speech tagged’ by the means of the CLAWS C5 tagset (see Baker, Hardie & McEnery 2006: 24). CLAWS, the Constituent Likelihood Automatic Word-tagging System, is an automated programme “which tags the words based on rules governing word-classes, coupled with complex algorithms” (Cheng 2011: 86). By these means, CLAWS reaches an error rate as low as 3% (see Cheng 2011: 86). It is important to note that this error rate may, of course, differ depending on particular phenomena. For example, it might be that the tagging error rate for nouns within the context of *of*-NPs is a lot higher than the one for nouns within simple noun phrases. This potential source of skewed data has, however, been circumvented by the manual categorisation of each *of*-NP used for the dataset (see Section 4.2 below).

Hence, the BNC has been chosen as an appropriate source for the study of *of*-NPs due to its clear distinction between written and spoken language, as well as different text genres, due to its low error rate in part-of-speech tagging, and its representativeness (albeit limited) of the written English language in a specific time frame.

4.1.1.2 Sketch Engine

The BNC was accessed by the means of Sketch Engine (Kilgarriff et al. 2004; Kilgarriff & Rychlý 2013c). Sketch Engine is an online concordancer which provides a number of corpus functions such as creating concordances and word sketches. Most importantly, it not only allows for simple word searches, but, due to its own query syntax and the specific tagging systems of individual corpora, it is also possible to search for more complex structures such as the different types of *of*-NPs. The specific corpus query used to extract these *of*-NPs for the study at hand is discussed in Section 4.1.1.4 below.

4.1.1.3 A brief note on corpus terminology

Before moving on to the query used for the study at hand, this section introduces some terminology common to corpus linguistics, and also establishes the notions of ‘KPIC’, ‘pre-cotext’ and ‘post-cotext’. The output of a corpus query is a list of all instances of

the search element within the respective corpus. Such a list is called ‘concordance’ (see Sinclair 2003: 173), two short examples of which are given in Figure 4-2 and Figure 4-3 on pages 74 and 75 respectively.

The lines of such a concordance are called ‘concordance lines’, each of which contains one instance of the search element within its immediate context. The manner of display with the search element in central position is known as KWIC (Key Word In Context) (see Sinclair 2003: 176). The central element of this display is referred to as the ‘node’, a term which is, however, usually used to refer to a single word only (see Sinclair 2003: 177). Since this study is examining a combination of words, i.e. a whole pattern constituting an *of*-NP, this term is avoided here. Instead, the term KPIC (Key Pattern In Context) is used as a means to refer to the central element of concordances within this corpus approach (see Schöenthal 2013: 21). In addition, the terms ‘pre-cotext’ and ‘post-cotext’ are used to refer to the immediate cotext preceding or following the KPIC respectively.⁴⁶

4.1.1.4 The Syntax of the Corpus Query

The query written for this corpus study is designed to search the BNC for all different types of *of*-NPs. It might seem like the most straightforward way to achieve this is to search the BNC for all instances of an ‘N of N’ pattern. However, as introduced in Section 1.1, ConEn1 of an *of*-NP can also consist of non-nominal elements such as quantities or pronominals. A whole list of possibilities for the nature of ConEn1 is given by the invented examples (4-1) and (4-8) wherein only ConEn1 varies and ConEn2 is held as constant as possible.

- (4-1) the *owner* of these houses
- (4-2) *none* of these houses
- (4-3) *which* of these houses
- (4-4) *many* of these houses
- (4-5) the *first* of these houses
- (4-6) *three* of these houses
- (4-7) the *better* of these two houses / the *more modern* of these two houses
- (4-8) the *best* of these houses / the *most modern* of these houses

⁴⁶ For a definition of ‘cotext’ see Section 5.1 in Chapter 5 on the cotextual analysis of English *of*-NPs.

As these examples illustrate, the element preceding *of* can be realised by nouns, general pronouns, interrogative pronouns, determiners, ordinal and cardinal numbers and comparative and superlative adjectives. Thus, the most simplistic corpus query which yields all instances of such *of*-NPs is the following:

[tag="N.*|PNI|PNQ|DT0|ORD|CRD|AJ.*"] [tag="PRF"] within <s/>

The syntax of this corpus query and of any following ones is composed of the query syntax particular to Sketch Engine (see Kilgarriff & Rychlý 2013a) and the word tags of the BNC (see BNC 2010a; Leech n.d).⁴⁷ This particular query yields 2,731,226 concordance lines with a pattern of two words as KPIC. The concordance in Figure 4-2 is an example of three such concordance lines extracted from the BNC. Within each line, the whole *of*-NP pattern is given in italics:

pre-context	KPIC	post-context
treasure and shipwrecks galore.	<i>Many of</i>	<i>these wrecks</i> were caused by
necessarily, chaired by <i>a senior</i>	<i>member of</i>	<i>staff</i> . They were always open
Highness, who travelled in <i>an</i>	<i>aircraft of</i>	<i>The Queen's Flight</i> , was

Figure 4-2: An exemplar concordance from the simple corpus query

As is apparent from this concordance, the corpus query above does not identify the whole *of*-NP pattern. Consequently, the boundaries of every *of*-NP still need to be identified manually. Although it has not been possible to avoid this problem entirely, for the present study, Sketch Engine has been used to identify as many left- and right-bound elements of the whole *of*-NP by adding a number of optional elements to the initial query. Thus, the corpus query that was used to gather the final dataset reads as follows:⁴⁸

⁴⁷ The BNC tags used within this study can also be found in the list of abbreviations at the beginning of this thesis, or see BNC (2010a).

⁴⁸ Since the completion of this thesis, the BNC part-of-speech tags used by Sketch Engine have been changed. For this reason, this query, which consists of the old tagging system, does not yield any results anymore. Instead, a new query with new tags would have to be written.


```
([tag="AT0"]|[tag="DPS"]|[tag="DT0"]|[tag="DTQ"]|[tag="ORD"]|[tag="CRD"])?
([tag="N.*"]|[tag="POS"])? [tag="AV0"]? [tag="DT0"]? [tag="CRD"]?
[tag="ORD"]? [tag="CRD"]? [tag="AV0"]? [tag="AV0"]? [tag="AJ.*"]?
[tag="CJC"]? [tag="AV0"]? [tag="AV0"]? [tag="AJ.*"]? [tag="CJC"]?
[tag="AV0"]? [tag="AV0"]? [tag="AJ.*"]? [tag="CJC"]? [tag="AV0"]?
[tag="AV0"]? [tag="AJ.*"]? [tag="CJC"]? [tag="AV0"]? [tag="AV0"]?
[tag="AJ.*"]? [tag="N.*"]? [tag="N.*"]? [tag="N.*"]? ([tag="N.*"]|
[tag="PNI"]|[tag="PNQ"]|[tag="ORD"]|[tag="CRD"]|[tag="DT0"]|[tag="AJ.*"])
[tag="PRF"] ([tag="AT0"]|[tag="DPS"]|[tag="DT0"]|[tag="DTQ"]|[tag="ORD"]|
[tag="CRD"])? ([tag="N.*"]|[tag="POS"])? [tag="AV0"]? [tag="DT0"]?
[tag="CRD"]? [tag="ORD"]? [tag="CRD"]? [tag="AV0"]? [tag="AV0"]?
[tag="AJ.*"]? [tag="CJC"]? [tag="AV0"]? [tag="AV0"]? [tag="AJ.*"]?
[tag="CJC"]? [tag="AV0"]? [tag="AV0"]? [tag="AJ.*"]? [tag="CJC"]?
[tag="AV0"]? [tag="AV0"]? [tag="AJ.*"]? [tag="CJC"]? [tag="AV0"]?
[tag="AV0"]? [tag="AJ.*"]? [tag="N.*"]? [tag="N.*"]? [tag="N.*"]?
([tag="N.*"]|[tag="PNI"]|[tag="PNQ"]|[tag="ORD"]|[tag="CRD"]|[tag="PNP"]|([
tag="AT0"]|[tag="DPS"]|[tag="DT0"]|[tag="DTQ"])? [tag="N.*"] [tag="POS"]))
within <s/>
```

This query includes more elements within the KPIC, as is shown in the sample concordance extract below, taken from the corpus dataset. The line numbers given within the concordance in Figure 4-3 correspond to the concordance line numbers within the final dataset:⁴⁹

No	pre-context	KPIC	post-context
10	I wake the air is full of	<i>the sound of curlews</i>	. It would be nice to
11	pedigree. <i>The unique</i>	<i>features of Bruno</i>	's universe arose
17	now quickly gather <i>all surviving members of his force</i>		and make for the

Figure 4-3: An exemplar concordance from the final, more complex corpus query

Hence, within the final dataset, the KPIC contains more elements of the *of*-NP patterns. Yet, as concordance line 11 in Figure 4-3 illustrates, Sketch Engine has not always been successful in identifying the whole pattern. Even so, the more complex corpus query has been used in order to accelerate the process of manually extracting the *of*-NPs. However, before the individual *of*-NPs could be identified and subsequently categorised, the dataset needed to be altered and prepared, as is described in Section 4.1.1.5.

4.1.1.5 Choosing a random sample for the corpus dataset

The final corpus query yielded a total of 6,577,822 concordance lines, which is over twice as many as with the initial query. This is due to the optional pre-nominal

⁴⁹ The complete corpus dataset can be found on the DVD attached in Appendix A.

elements at the beginning of the corpus query. In fact, Sketch Engine identifies an *of*-NP such as *the wooden door of our house* as three separate occurrences of the pattern, namely *the wooden door of our house*, *wooden door of our house* and *door of our house*, thus creating a lot of noise within the dataset.

While the current version of Sketch Engine cannot eliminate such duplicates, there is a beta version which contains new functions that still need further testing before they are implemented in the main version of Sketch Engine (see Kilgarriff & Rychlý 2013d). One of these functions is the so-called ‘subparts function’ which eliminates duplicate concordance lines of the same *of*-NP.⁵⁰ Applying this function reduced the dataset by more than half to 3,021,963 hits. Note that this number still contains just under 300,000 hits more than the one of the initial simple query mentioned in Section 4.1.1.4 above. This suggests that there are still some duplicate representations of *of*-NPs present in the dataset that could not be eliminated by the subparts function. These duplicates were, however, eliminated manually during the categorisation process described in Section 4.2 below.

Before starting with the categorisation process, however, a random sample of all concordance lines had to be chosen. For this purpose, the lines were shuffled using the random shuffle function of Sketch Engine and the first 2,000 of them were extracted as an xml-file and then imported into an Excel spreadsheet. Due to shuffling the concordance lines, this dataset is taken to be a representative sample of all 3,021,963 *of*-NPs found in the BNC. In the following, Section 4.1.2 gives a brief overview of the outline of the resulting corpus dataset, which is attached in Appendix A. Section 4.3 then moves on to present how each concordance line was manually categorised into different types of *of*-NPs.

4.1.2 The outline of the corpus dataset

As is shown in Figure 4-4 below, which contains a screenshot from the corpus dataset, the Excel spreadsheet with the 2,000 instances of *of*-NPs is organised into various columns. Each column gives information about different aspects of each concordance line or specifies the category the *of*-NPs were put into during manual categorisation. This section briefly elaborates on this outline of the dataset.

⁵⁰ I am indebted to Adam Kilgarriff and his Sketch Engine support team for making this ‘subparts function’ available to me, after I contacted them for help on this matter.

Column A shows the number of the concordance line within the dataset. The numbers start at 1 and end at 2,000. Throughout the whole study, each concordance line is identifiable by its corresponding number—examples taken from the dataset are always marked with the corresponding number in chevrons < > at the end. Furthermore, some of the concordance lines have been split up into more than one number. This was done in cases where an *of*-NP was embedded within another *of*-NP. An example of this is concordance line <1> which has been subdivided into numbers <1.a> and <1.b>, where the latter is embedded within the former, as given in examples (4-9) and (4-10):

- (4-9) membership of the National Union of Students <1.a>
(4-10) the national Union of Students <1.b>

Such embedded *of*-NPs are henceforth referred to as *of*-NP clusters (see Section 4.3.3 for a more detailed discussion).

Column B, then, contains information on the source document which the extracted expression stems from. The information starts off with a code consisting of three letters and/or digits. This code is a unique identification code allocated to each text document within the BNC. Next to this code, the column also contains information on the title of publication and the text medium. In addition, in Column C, the concordance lines have been categorised according to whether they originate from a written or a spoken text. This subdivision was necessary due to the focus of the current study on written *of*-NPs only.

The central part of the spreadsheet, the KPIC, can be found in Column E, with the pre-cotext and the post-cotext in Columns D and F respectively. They are followed by column G, which contains the actual, whole, written out *of*-NP. This column was necessary because the final corpus query as presented in Section 4.1.1.4 did not always correctly identify the boundaries of each *of*-NP. Although the more complex corpus query helped to identify the boundaries more quickly, it was still necessary to check and correct them manually.

Column H, then, contains the code for the category each *of*-NP has been grouped into. A key to the code used for these categories is given in the second bookmark of the same Excel spreadsheet. The methodology of how these categories were identified is presented in Section 4.2 below. In relation to these codes, Column I contains the constructional meaning that is associated with each *of*-NP category, while Columns J

to AO contain the semantic categorisation system based on yes/no-questions for each individual category (see Section 4.2).

A	B	C	D	E	F	G	H	I	J	K	L
Number	Sketch Engine Reference	Written / Spoken	Pre-context			Actual of-NP			Category		
1.a	K5D,`w		membership of Union /NN1	KPIC	Post-context	membership of the National Union of the National Ur BA		Constructional Meaning	AA Is ConEn1 a feature of ConEn2?		
1.b	K5D,`w		membership of Union /NN1			membership of the National Union of the National Ur BA			AB Is ConEn1 a meronymic part of ConEn2?		
2	K52,`w		to profit from /NN1 of /PRF Y and Sports . Bo			to profit from /NN1 of /PRF Y and Sports . Bo			AC Are ConEn1 and ConEn2 two separate entities that are related		
3	HL7,`w		nominated as /NN1 of /PRF Y and Sports . Bo			nominated as /NN1 of /PRF Y and Sports . Bo					
4.a	H8U,`w		the problem of /NN2 of / (and , in some			the problem of /NN2 of / (and , in some					
4.b	H8U,`w		the problem of /NN2 of / (and , in some			the problem of /NN2 of / (and , in some					
5.a	C95,`w		Rio Sarabia , to /NN1 of /PRF th of Sarabia . This (to) the west of the town of /PA			Rio Sarabia , to /NN1 of /PRF th of Sarabia . This (to) the west of the town of /PA					
5.b	C95,`w		Rio Sarabia , to /NN1 of /PRF th of Sarabia . This (to) the west of the town of /PA			Rio Sarabia , to /NN1 of /PRF th of Sarabia . This (to) the west of the town of /PA					
6	CEK,`w		just gives out /NN1 of /PRF th of Sarabia . This (to) the west of the town of /PA			just gives out /NN1 of /PRF th of Sarabia . This (to) the west of the town of /PA					
7	AM8,`w		to give the health of /PRF your in particular . W			to give the health of /PRF your in particular . W					
8	BMR,`w		news comic , `NN1 passion /Nsex junkies who			news comic , `NN1 passion /Nsex junkies who					
9	FRC,`w		to give the health of /PRF your in particular . W			to give the health of /PRF your in particular . W					
10	A6T,`w		the air is full of /NN1 of /PRF th . Shampoo came			the air is full of /NN1 of /PRF th . Shampoo came					
11	EEM,`w		the air is full of /NN1 of /PRF th . Shampoo came			the air is full of /NN1 of /PRF th . Shampoo came					
12	HPH,`w		by strength ' (1 of /PRF Col) - is this a reas			by strength ' (1 of /PRF Col) - is this a reas					

Figure 4-4: A screenshot of the corpus dataset (Appendix A)

4.2 Identifying different types of *of*-NPs: The categorisation process

After all *of*-NPs had been extracted from the BNC and a representative sample of 2,000 had been selected, each of them was then analysed manually and put into different categories. As previously mentioned, this analysis was initially done without any preconceived ideas about the nature of *of*-NPs. By examining more and more of the expressions, however, it then became possible to identify their common denominator, i.e. the conceptual entities. In turn, this gave rise to the theoretical framework presented in Chapter 3, which is embedded in Conceptual Blending Theory and Construction Grammar. Once this framework had been developed, the analysis and categorisation process of the corpus dataset was started anew, and *of*-NPs were put into categories based on the meaning relationship identified between ConEn1 and ConEn2.

Specifically, each expression was dissected into its individual semantic components: i.e. the lexical meaning of ConEn1 and ConEn2, as well as the constructional meaning that constitutes the relationship between the former. *Of*-NPs that featured the same meaning relationship between the two conceptual entities were then put into the same category. For every *of*-NP that featured a new, thus far undetected, meaning relationship, a new category was created. Hence, ultimately, this categorisation process identified all the different meaning relationships that exist between ConEn1 and ConEn2 of English *of*-NPs (at least within the 2,000 concordance lines of the current dataset), including all core as well as any idiosyncratic instances of *of*-NPs. This newly compiled list of *of*-NP categories constitutes different *of*-NP constructions which share the same basic structural alignment of the three conceptual entities, but differ based on their constructional meaning relationship between ConEn1 and ConEn2.

These different meaning relationships were identified by the means of yes/no-questions such as *Is ConEn1 a feature of ConEn2?* for Subcategory AA, or *Is ConEn1 a meronymic part of ConEn2?* for Subcategory AB (see Section 4.3.2.1).⁵¹ For example, membership of Subcategory AA is determined by a positive answer to the respective category's yes/no-question (i.e. *Is ConEn1 a feature of ConEn2?*) and a

⁵¹ As presented in Figure 4-4, all of these yes/no-questions can be found in columns J to AO of the corpus dataset in Appendix A.

negative answer to the yes/no-question of all other categories. While these yes/no-questions helped categorise the individual *of*-NPs, the semantic substance of each category's constructional meaning was then glossed into a more concise term⁵² which captures the semantic essence of each category. In the following, each category is thus named by its category label (e.g. AA, AB, BA, or H) but also by its concise constructional meaning—such as CONEN1 IS A FEATURE OF CONEN2—which is always given in small caps.

In addition, as will become apparent in Section 4.3.2, which presents the different *of*-NP categories that have resulted from this corpus analysis, the individual *of*-NP categories have been grouped together into nine larger categories based on related constructional meanings. For example, five categories of *of*-NPs were grouped together into Category A, because, as will be shown, their constructional meanings all relate to aspects of Seiler's (1983: 6) semantic definition of 'possession'. Therefore, some of the sections on the nine main categories of *of*-NPs below also make reference to previous literature explaining how their subcategories relate to one another.

Furthermore, this categorisation process applied Sinclair's (1999: 166) technique of analysing 30 concordance lines at a time. He advocates to first select

a single screenful of 25-30 lines [...] from the hundreds of thousands of instances [...]. These are examined and provisionally classified, and then a second selection is made [...]. Some of these fit into established categories, and some are new; some require an extension of a category, or occasionally a reconsideration of two or more tentative categories. This process continues until each new set of instances adds little or nothing to the description – no new categories, no extensions or reclassifications; largely just an accumulation of similar instances. (Sinclair 1999: 166; also see Hunston 2002: 52)

Similarly, the first 30 concordance lines of the *of*-NP corpus dataset were categorised as described above based on the meaning relationship between ConEn1 and ConEn2. Afterwards, the next 30 concordance lines were analysed, which led to the categories being expanded, altered or subdivided. This process was then repeated multiple times. Unlike Sinclair (1999: 52), however, who stops at 150 instances because no new patterns occurred, the categorisation process was continued all the way to concordance

⁵² This concise term for each *of*-NPs meaning relationship can be found in Column I of the corpus dataset in Appendix A (also see Figure 4-4).

line <2,000>, even though not every new set of 30 concordance lines yielded a new pattern and thus a new category. This was done for two reasons. Firstly, although rare, new patterns were still found late in the process, with the number of concordance lines close to 2,000. Secondly, categorising a higher number of concordance lines also allowed for a more precise insight into the frequency of each individual *of*-NP category. The categorisation process was then stopped at 2,000 because it became too difficult to still grasp and keep track of the whole dataset. Thus, in order to keep the data at a manageable size, but still include as many instances as possible, 2,000 concordance lines were categorised.

Finally, it is important to note that the whole categorisation process was conducted by one individual researcher only. In order to ensure inter-coder reliability for the resulting categories of this analysis, the dataset would have to be categorised and tested by other individuals using the proposed yes/no-question system presented in this section. However, since the reliability of the resulting *of*-NP categories is already partly addressed by the cognitive experiments in Chapter 6, this process has, for reasons of scope, been left for future research instead.

4.3 Results: *Of*-NPs in the corpus dataset

4.3.1 Basic statistics

Even though the focus of this study lies on the nature of *of*-NPs within written language, Section 4.3.1.1 first briefly examines the distribution of written and spoken data across the various datasets as it can be used (a) as an indication of the frequency of *of*-NPs within written and spoken language and (b) as an indication of the representativeness of the corpus dataset. Subsequently, Section 4.3.1.2 presents the statistics within the 2,000 concordance lines of the corpus dataset. It explains how the final number of *of*-NPs in the corpus dataset (which is included in the discussion of the different categories in Section 4.3.2 below) amounts to 2,037 rather than just 2,000.

4.3.1.1 The distribution of written and spoken data

As indicated in Table 4-1 below, the BNC consists of 90% written and 10% spoken data (see BNC 2010b). While these numbers are only an approximation, they can be used as a reference point for the overall frequency of *of*-NPs within written and spoken language. Table 4-1 shows that the 3,021,963 concordance lines extracted from the BNC, which contain all instances of *of*-NPs within the BNC, are split into 95.8% of

written instances and 4.2% of spoken instances. Because this split does not match the distribution of written and spoken texts within the BNC, it indicates that, overall, the phenomenon of *of*-NPs is more frequent within written language than spoken language. If the split were 90% and 10%, it would mean that the probability of finding *of*-NPs within written language is as high as the probability of finding them within spoken language. However, the 95.8% show that this is not the case.

Table 4-1: The distribution of written and spoken data within the BNC and the dataset

	Written		Spoken		Total	
	Frequency	%	Frequency	%	Frequency	%
BNC	-	90.0	-	10.0	-	100.0
<i>of</i> -NPs in total dataset	2,888,257	95.8	133,706	4.2	3,021,963	100.0
<i>of</i> -NPs in corpus dataset	1,906	95.3	94	4.7	2,000	100.0

Moreover, Table 4-1 also indicates that the split between written and spoken *of*-NPs within the complete dataset of 3,021,963 concordance lines, and within the random sample of 2,000 concordance lines, is approximately the same. While it has to be assumed that the chosen sample is representative of the complete dataset, these numbers are an indication that this is indeed the case.

4.3.1.2 The statistics of the corpus dataset

The corpus dataset consists of 2,000 concordance lines. Hence, the numbers for the concordance lines go as far as <2,000>. However, because this study focuses on written data only, all concordance lines that originated from spoken data had to be excluded from the dataset.

Table 4-2: The frequency of concordance lines from written and spoken data

	Frequency	Percent %
Written	1,906	95.3
Spoken	94	4.7
Total	2,000	100.0

Their frequency among the 2,000 concordance lines is given in Table 4-2. Hence, only the 1,906 instances of *of*-NPs from written data are included in the upcoming analysis of *of*-NPs.

Furthermore, not all of these 1,906 concordance lines contained valid instances of *of*-NPs. The corpus query used to extract the *of*-NPs (see Section 4.1.1.4) still included some invalid concordance lines too. These invalid concordance lines can be put into three different categories. In the first category, as is illustrated in (4-11), they do follow the pattern of the corpus query but were actually part of a different grammatical structure:

- (4-11) a solicitor must always tell *the client of anything* he or she happens to know which might prejudice a client's case <1629>

In (4-11), the KPIC *the client of anything* does not actually constitute an *of*-NP. Rather, it is part of a ditransitive argument structure construction of 'telling' where *a solicitor* is the grammatical subject and *the client* and *of anything he or she happens to know which might prejudice a client's case* both function as complements. In the second category of invalid concordance lines, the words in the KPIC do not follow the pattern of the corpus query but have been included because of an incorrectly tagged word. See, for example, the KPIC in (4-12):

- (4-12) especially those found in regions /NN2 indicative /NN1 of /PRF a /AT0 strongly /AV0 seasoned /AJ0 climate /NN1. <1881>

In (4-12), each word within the KPIC is followed by its BNC tag.⁵³ It can be seen that the adjective *indicative* has been tagged incorrectly as a singular common noun. Yet, the pattern *indicative of a strongly seasoned climate* is an instance of adjectival postmodification (see Schöenthal 2013) rather than an instance of an *of*-NP, and thus had to be excluded from the analysis of *of*-NPs. Thirdly, there were also two concordance lines within the dataset that were duplicates of other concordance lines that had not been detected by the beta version of Sketch Engine (see Section 4.1.1.5 above). In total, there were 25 instances of invalid concordance lines, which, as shown in Table 4-3 below, amounts to 1.3% of concordance lines from written data.

⁵³ The meaning of each BNC tag can be found within the list of abbreviations at the beginning of this thesis, or see BNC (2010a).

Table 4-3: The frequency of invalid concordance lines in the corpus dataset

	Frequency	Percent %
Valid concordance lines	1,881	98.7
Invalid concordance lines	25	1.3
Total	1,906	100.00

In the following, these three types of invalid concordance lines are included in the number of missing values and excluded from analysis, too. This leaves us with a total number of 1,881 valid concordance lines from written data.

These 1,881 concordance lines, however, do not yet represent the actual number of instances of *of*-NPs as included within the dataset. As illustrated with examples (4-9) and (4-10) in Section 4.1.2 above, some concordance lines were split up into two or more individual lines because they consisted of *of*-NP clusters. Table 4-4 illustrates the frequency of these clusters and how they amount to a count of 2,070 written *of*-NPs within the corpus dataset.

Table 4-4: The frequency of *of*-NP clusters of different levels of complexity

		Frequency	Factor	Final number of <i>of</i> -NPs
Single <i>of</i> -NPs		1,703	x1	1,703
<i>of</i> -NP clusters	Pairs	168	x2	336
	Triplets	9	x3	27
	Quadruplets	1	x4	4
Total		1,881	-	2,070

Finally, while these 2,070 *of*-NPs were all analysed manually in order to create the *of*-NP categories presented below, after the analysis a further 33 expressions had to be excluded from the dataset and the statistical measures. This was done based on their different grammatical structure, belonging to a different—albeit related—grammatical phenomenon. For illustration, three examples of these expressions are given in (4-13) to (4-16):

- (4-13) by virtue of its location <420>
- (4-14) on the side of caution <769>
- (4-15) to the best of my knowledge <1539>
- (4-16) for the sake of the few unfrazzled nerve-endings I have left <1864>

These expressions do follow the *of*-NP structure searched for by the corpus query given in Section 4.1.1.4 above. However, they are different in that ConEn1 consists of a prepositional phrase. In other words, all of the expressions begin with a preposition which contributes considerably to the overall meaning of each expression. For example *virtue of its location* in (4-13) only makes sense in combination with the preceding preposition *by*. Therefore, these expressions are not considered direct representatives of the phenomenon of *of*-NPs as they are more prepositional rather than nominal in nature. However, they are certainly related to the phenomenon of *of*-NPs and need to be analysed in more detail in future research. Here, however, they have been excluded from further analysis and the focus remains solely on the phenomenon of *of*-NPs. The frequency of nominal and prepositional *of*-NPs in the corpus dataset is given in Table 4-5:

Table 4-5: The frequency of prepositional and nominal *of*-NPs in the dataset

	Frequency	Percent %
Nominal <i>of</i> -NPs	2,037	98.4
Prepositional <i>of</i> -NPs	33	1.6
Total	2,070	100.0

Thus, the final data of the corpus dataset used for the presentation of all corpus categories, consists of 2,037 instances of nominal *of*-NPs from written data some of which are part of *of*-NP clusters.⁵⁴

4.3.2 The different types of *of*-NP categories

As a result of the categorisation process presented in Section 4.2, the 2,037 instances of *of*-NPs were put into a total of nine main categories and 31 subcategories. These categories are based on semantic similarities in the relationship between ConEn1 and

⁵⁴ Note, however, that the number given to the last concordance line within the dataset is still only <2,000>, because *of*-NP clusters have been assigned numbers such as <1.a> and <1.b> in (4-9) and (4-10) above respectively.

ConEn2, and incorporate instances of both core and idiosyncratic examples. Therefore, these nine categories illustrate the diversity of the nature of *of*-NPs and how the different types can all be captured within the same framework. As an overview, Table 4-6 shows the frequency of the nine main categories.

Table 4-6: The frequencies of the nine main categories of *of*-NPs

Category	Frequency	Percent %
A: Possession	746	36.6
B: Qualification	291	14.3
C: Quantification	214	10.5
D: Engagement	282	13.8
E: Selection	228	11.2
F: Apposition	95	4.7
G: Displacement	104	5.1
H: Typification	75	3.7
I: Election	2	0.1
Total	2,037	100.0

In Sections 4.3.2.1 to 4.3.2.9, the overall nature, statistics, semantics and formal features of each main category of *of*-NPs are presented by looking at specific examples from the corpus dataset. In addition, each category also contains some atypical examples, which are discussed in order to illustrate how the constructional meaning specific to each category can be vital in interpreting the semantics of these *of*-NPs, and how idiosyncratic examples were incorporated into the analysis.

Furthermore, as will become clear, some of these nine categories relate to distinctions already identified by other scholars. For example, Category C contains the measure and size nouns discussed by Brems (2003, 2010) and Keizer (2007: 109–151) (see Section 2.2.2); Category E incorporates a type of Fawcett’s (2007) ‘selection’ (see Section 2.2.6.2); Category G entails the appraisal *of*-NPs discussed in Section 2.2.5; and Category H contains the so-called SKT expressions as presented in Section 2.2.4. Furthermore, some categories unite *of*-NPs that are related to other concepts, such as the semantic definition of ‘possession’ for Category A; the notions of Classifier and Epithet for Category B; or the concept of ‘event nouns’ for Category D. Some of the nine categories are altogether new, while other categories identify new aspects of a

type of *of*-NP, or relate previously discussed types of *of*-NPs with one another and group them together within one main category.

4.3.2.1 Category A: Possession

The first main category of *of*-NPs is by far the most frequent one, with a raw frequency of 746 in the corpus dataset which corresponds to 36.6% (see Table 4-6). It groups together *of*-NPs whose constructional meaning contains an element of possession. The concept of possession is here not taken to mean ‘ownership’ or ‘having’ in a strict sense, but rather relates to Seiler’s (1983: 6) semantic definition of the concept:

It is the relationship between a human being and his kinsmen, his body parts, his material belongings, his cultural and intellectual products. In a more extended view, it is the relationship between parts and whole of an organism.

However, this definition is extended here to include non-human and non-animate entities as well. Furthermore, it is worth noting that all of the *of*-NPs in this category involve a type of ‘relational noun’ (Keizer 2007: 64), either in Löbner’s (1985: 292) sense of nouns that “describe objects in a certain relationship to others”, such as kinship terms, or nouns which Keizer (2007: 64) describes as “denot[ing] parts or (physical or abstract) features of entities and which cannot be felicitously used without (implicit or explicit) reference to these entities”.⁵⁵ Overall, within this large and very frequent main category of *of*-NPs, ConEn1 can either be said to belong to ConEn2 in some capacity or vice versa. Hence, based on the different types of possession identified by Seiler (1983) and the different, relevant types of relational nouns discussed by Keizer (2007), the first main category of *of*-NPs groups together five different subcategories, each involving a different aspect of the above notion of possession. As an overview, the frequency of these five subcategories AA to AE and their respective constructional meanings are given in Table 4-7:

⁵⁵ Note, however, that Keizer also considers deverbal nouns or nominalisations such as *destruction* or *destroying*, as well as de Wit’s (1997: 129–135) ‘picture nouns’ to be relational nouns, which are here part of other *of*-NPs, namely categories D and G in Sections 4.3.2.4 and 4.3.2.7 respectively.

Table 4-7: The statistical frequencies within *of*-NP category A

	Frequency	Percent % within category	Percent % across dataset
AA: CONEN1 IS A FEATURE OF CONEN2	275	36.9	13.5
AB: CONEN1 IS A MERONYMIC PART OF CONEN2	181	24.3	8.9
AC: CONEN1 IS RELATED TO CONEN2	123	16.5	6.0
AD: CONEN2 IS THE SOURCE OF CONEN1	110	14.7	5.4
AE: CONEN2 POSSESSES CONEN1	57	7.6	2.8
Total (A)	746	100.0	36.6
Total (Dataset)	2,037	-	100.0

As Table 4-7 illustrates, the 746 instances of *of*-NPs in Category A are split up into five subcategories. Most notably, Subcategory AA, with a frequency of 275, is also the most frequent type of *of*-NP within the whole dataset, making up for 13.5% of all *of*-NPs. In the following, the nature of these five subcategories are presented individually.

Category AA: CONEN1 IS A FEATURE OF CONEN2

The first, and most frequent, subcategory of possession *of*-NPs captures all instances of the constructional meaning CONEN1 IS A FEATURE OF CONEN2. This type of possession relates to Keizer's (2007: 64) "(physical or abstract) features of entities" as well as 'deadjectival nouns' such as *stupidity* which she also includes in her class of relational nouns. Examples of this subcategory taken from the corpus dataset are given with the following six *of*-NPs:

- (4-17) the volume of imports <369>
- (4-18) the shape of the gall bladder <963>
- (4-19) availability of the treatment <16>
- (4-20) the safety of cars <961>
- (4-21) an essential feature of modern life <284>
- (4-22) every aspect of the children's care <1023>

In each of these examples, ConEn1 designates a feature of ConEn2. More specifically, this relationship can be instigated by relational nouns such as *volume* or *shape* in (4-17) and (4-18) or deadjectival nouns such as *availability* or *safety* in (4-19) and (4-20), both of which are inherently always a feature of another entity, or by more general

nouns such as *feature* and *aspect* in (4-21) and (4-22) which directly relate to the semantic essence of Subcategory AA.

Once categorised based on their meaning relationship of CONEN1 IS A FEATURE OF CONEN2, the formal features of the 275 *of*-NPs were examined, looking at which types of conceptual entities could appear as part of this *of*-NP construction. This analysis confirmed that the form of the two conceptual entities involved in the meaning relationship fit the semantics of the category. Indeed, ConEn2 of Subcategory AA can either consist of a mass (4-23) or a count noun (4-24), which can either be singular (4-25) or plural (4-26), and definite (4-27) or indefinite (4-28).

- (4-23) the amount of such information <732.b>
- (4-24) the major theme of this chapter <1940>
- (4-25) the richness of the subject <1831>
- (4-26) the magnificence of its views <1796>
- (4-27) the definition of the problem <1932>
- (4-28) the appetite of a motorised refuse truck <1302>

The diversity of the form of these ConEn2s aligns with the fact that any kind of entity—whether abstract or concrete, plural or singular, known or unknown, specific or unspecific—has got related features which can be highlighted and can appear as ConEn1 in these *of*-NPs. Finally, considering all *of*-NPs in (4-17) to (4-28) shows that ConEn1 of Subcategory AA is predominantly singular as usually only one feature of ConEn2 is highlighted for discussion. The exception to this are a few nouns used to refer more generally to more than one characteristic of the respective ConEn2 such as *the unique features of Bruno's universe* <11>, or *the conditions of the 1930s* <1316>.

Category AB: CONEN1 IS A MERONYMIC PART OF CONEN2

The second subcategory of Category A, with a frequency of 181 (see Table 4-7 above), contains *of*-NPs that feature Seiler's (1983: 6) "body parts" aspect of possession. This aspect refers to the sense relation of meronymy, which is defined as a 'part of' relation between two entities (see Jackson & Zé Amvela 2007: 118) and which is based on our cognitive awareness of the part-whole structure of ourselves and other entities around us (see Lakoff 1987: 273–274). In the case of human beings, such meronyms would be body parts as postulated by Seiler, but his definition of possession can be extended to include parts of other entities too. Hence, the *of*-NPs in Subcategory AB consist of meronymic parts (ConEn1) that inherently belong to an entity (ConEn2). These *of*-

NPs thus express the constructional meaning CONEN1 IS A MERONYMIC PART OF CONEN2. Examples of Subcategory AB are given in (4-29) to (4-34):

- (4-29) the intestines of bears <1524>
- (4-30) the foot of the stairs <1077>
- (4-31) the heart of the U.K. <709>
- (4-32) the back of his car <933>
- (4-33) the end of the century <1159>
- (4-34) some parts of Wales <1843>

Within the 181 *of*-NPs of Subcategory AB, the meronymic relationship between ConEn1 and ConEn2 does occasionally consist of concrete entities such as body parts (4-29). Most often, however, it identifies a fixed point in ConEn2's dimensions, either spatially as in (4-30), (4-31) and (4-32), or temporally as in (4-33). In addition, this relationship can be metaphorical in nature such as in (4-30) and (4-31). Finally, often the meronymic relationship between ConEn1 and ConEn2 is also expressed explicitly by the use of a general noun such as *parts* in (4-34).

In addition, there are no formal restrictions on the type of ConEn1 and ConEn2 that can appear in these *of*-NPs: they can be plural or singular, definite or indefinite. This is supported by the semantics of the subcategory, as both plural and singular, and definite and indefinite entities can consist of one or multiple parts.

Category AC: CONEN1 IS RELATED TO CONEN2

Subcategory AC, which occurs a total of 123 times in the whole corpus dataset (see Table 4-7 above), relates to Seiler's (1983: 6) "kinsmen" aspect of possession. While it does indeed include kinship terms such as *granddaughter* (4-35) it also accommodates other human relations such as friendship (4-36), servitude (4-37), or fandom (4-38). Furthermore, Subcategory AC also includes relations between human entities and non-human entities such as (4-39), and examples including deverbal person nouns⁵⁶ (4-40) (see Keizer 2007: 64). In addition, this subcategory also contains *of*-NPs where a general noun expresses the notion of 'relation' between ConEn1 and ConEn2 explicitly (4-41).

⁵⁶ These deverbal person nouns are also called 'agential nouns' by Quirk et al. (1985: 1289).

- (4-35) the granddaughter of a criminal <386>
- (4-36) that woman friend of the boss who clings to his arm in the moonlight
<672>
- (4-37) wards of the Queen <943>
- (4-38) many young and impressionable fans of Happy Mondays <597>
- (4-39) the lady of the house <479>
- (4-40) the readers **of** my review of The Handbook of Human Intelligence
<1402.b>⁵⁷
- (4-41) a close relation of the snail <1158>

Hence, in all cases of Subcategory AC, there are two fully independent entities which are related to one another in some way. In other words, these *of*-NPs express the constructional meaning CONEN1 IS RELATED TO CONEN2.

When examining the formal restrictions of this type of *of*-NP, it becomes clear that ConEn2 is always definitely referring, i.e. it is always used to refer to an identifiable individual. Note that, *the snail* in (4-41) is not used to refer to one particular, individual snail, but rather to the whole class of snails and is thus classified as a generic, definite reference (see Radden & Dirven 2007: 111). Similarly, the expression in (4-35) is taken from Sara Wood's novel *Mask of Deception* (1993), where over several pages prior to the occurrence of the *of*-NP in question it has been established that the grandmother was a criminal. Therefore, it is clear who *a criminal* in (4-35) refers to and, while structurally indefinite, it is thus also definitely referring (see Jones 2014 for research on indefinite expressions used for definite reference).

Category AD: CONEN2 IS THE SOURCE OF CONEN1

The fourth subcategory of Category A, with a frequency of 110 (see Table 4-7 above), captures yet another aspect of Seiler's (1983: 6) semantic notion of possession, namely that of "cultural and intellectual products". More specifically, it views an individual's products—even after they have entered the public sphere—as part of their intellectual property and thus as a type of their possession. Examples of such a meaning relationship between ConEn1 and ConEn2 are given in (4-42) to (4-44).

⁵⁷ The expression in (4-40) is an example of an *of*-NP cluster (see Section 4.3.3), which consists of three *of*-NPs that are embedded within one another. The *of* that is involved in a meaning relationship of CONEN1 IS RELATED TO CONEN2 is here emphasised in bold letters.

- (4-42) the works of Shakespeare <257>
- (4-43) the offspring of my mind <652>
- (4-44) the decisions of the courts <1383>

Thus, *of*-NPs of this kind feature the constructional meaning relationship CONEN2 IS THE SOURCE OF CONEN1. This relationship also allows for expressions such as (4-45) to (4-47), which do not necessarily involve someone's intellectual property, but still feature a product or outcome of something.

- (4-45) the bites of body lice <1184>
- (4-46) the patterning of Man <664.b>
- (4-47) the effects of UN sanctions <641>

In (4-45), *the bites* are not an intellectual property of *body lice*, but they were produced by them nevertheless. Similarly, in (4-46) mankind is shown to be the source of the mark it left behind on a landscape, while (4-47) is another example of a general noun, *effects*, that makes explicit the constructional meaning at work within the *of*-NP. No specific formal restrictions were found neither for ConEn1 nor ConEn2.

Category AF: CONEN2 POSSESSES CONEN1

Finally, the fifth subcategory of Category A consists of *of*-NPs that feature the more traditional notion of possession or ownership, which is captured by “his material belongings” in Seiler’s (1983: 6) semantic notion of possession. Surprisingly, this more common notion of possession occurs the least often within Category A with only 57 instances (see Table 4-7 above). The yes/no-question with which these *of*-NPs are identified is *Is ConEn1 owned by ConEn2?*⁵⁸ Thus, ConEn1 and ConEn2 of this type of *of*-NP feature the constructional meaning relationship CONEN2 POSSESSES CONEN1. Examples of such *of*-NPs are given in (4-48) to (4-50):

- (4-48) the court of Louis XIV <347>
- (4-49) the wages of ordinary labourers <754.b>
- (4-50) the fate of the elderly who were childless <1060.a>

⁵⁸ Note that there is one *of*-NP in the dataset—*the body of Michael Chatfield* <961>—that answers the question “Is ConEn1 owned by ConEn2?” with “Yes” but that has not been put into Category AE. Instead, this *of*-NP was put into Category GA which is associated with the constructional meaning CONEN1 IS A REPRESENTATION OF CONEN2. This is discussed in more detail in Section 4.3.2.7 on Category GA below.

Note that these *of*-NPs also include more abstract entities that can be possessed. In (4-50), for example, the possessive relationship holds between *the elderly* and the idea that we all have *a fate*, our own personal story.

There are no specific formal restrictions for this type of *of*-NP. However, a structural subtype of these *of*-NPs was identified which occurs three times in the corpus dataset. These three *of*-NPs are given in (4-51) to (4-53):

(4-51) a young dependant of his <1496>

(4-52) all those crooked grey teeth of his <1752>

(4-53) those hens of the old lady's <1758>

In these *of*-NPs the constructional meaning of CONEN2 POSSESSES CONEN1 still holds, but ConEn2 is structurally expressed by the means of a possessive pronoun as in (4-51) and (4-52) or by a genitive cluster as in (4-53). This type of *of*-NP has previously been identified as a 'post-genitive' by Quirk et al. (1985: 330–331) and has mainly been discussed in relation to its structural counterpart such as *his young dependant* in the past (see for example Hawkins 1981).

4.3.2.2 Category B: Qualification

The second main category of *of*-NP constructions found in the corpus dataset involves the relationship of qualification, where ConEn1 and ConEn2 express the constructional meaning CONEN2 ADDS ADDITIONAL INFORMATION TO CONEN1. As shown in Table 4-6 above, *of*-NPs of this type occur in the dataset 291 times, which equates to 14.3% of the dataset. However, as will be illustrated below, closer inspection of this *of*-NP category has identified three different ways in which ConEn2 can add further information to ConEn1. Thus, the category has been split up into the subcategories of classification, qualification and identification. This distinction is reminiscent of three functions associated with premodification in the English noun phrase: Classifier, Epithet and Deictic respectively.⁵⁹ Classifiers “indicat[e] a particular subclass of the thing in question, e.g. *electric trains*, *passenger trains*, *toy trains*” (Halliday & Matthiessen 2014: 377, emphases in original). Epithets, on the other hand, do not identify a subclass of the noun but merely “indicat[e] some quality

⁵⁹ In SFL, the term 'qualification' is associated with postmodification in the nominal group, i.e. with the 'qualifier' element (see Bloor & Bloor 2004: 143). Here, however, it is understood more generally in Radden & Dirven's (2007: 141) terms as accounting for both pre- and postmodification, thereby also including the premodifying function of 'Epithet'.

of the subset, e.g. *old, long, blue, fast*” (Halliday & Matthiessen 2014: 376, emphases in original). Thirdly, the “Deictic element indicates whether or not some specific subset of the Thing is intended” (Halliday & Matthiessen 2014: 365). In other words, Deictics are used to point out or identify a particular subset of the thing, i.e. a specific, individual instance (also see Bloor & Bloor 2004: 140–143). These same functions of classification, qualification and identification are also apparent in the three subcategories of Category B, whose frequencies are given in Table 4-8:

Table 4-8: The statistical frequencies within *of*-NP category B

	Frequency	Percent % within category	Percent % across dataset
BA: CONEN2 CLASSIFIES CONEN1	111	38.1	5.4
BB: CONEN2 QUALIFIES CONEN1	140	48.1	6.9
BC: CONEN2 IDENTIFIES CONEN1	40	13.7	2.0
Total (B)	291	100.0	14.3
Total (Dataset)	2,037	-	100.0

As illustrated in Table 4-8, within Category B, Subcategory BB is the most frequent with 140 instances, closely followed by BA, which includes 111 *of*-NPs. The third subcategory, BC, then, is the least frequent of the three with only 40 instances. In the following, these three subcategories and their specific nature are looked at in more detail.

Category BA: CONEN2 CLASSIFIES CONEN1

The first subcategory is the second most frequent type of *of*-NP in Category B (see Table 4-8). Its constructional meaning relationship between ConEn1 and ConEn2 is such that ConEn2 identifies a type or subset of ConEn1. As introduced above, this meaning relationship is reminiscent of the noun phrase function of ‘classification’. Thus, the 111 *of*-NPs of this subcategory express the constructional meaning CONEN2 CLASSIFIES CONEN1. Examples of this type of *of*-NP are given in the following:

- (4-54) cancer of the womb <776>
- (4-55) a word of advice <1579>
- (4-56) Chambers of Commerce <1311>

In these examples, each ConEn2 identifies a subtype of ConEn1. In (4-54), it marks a specific type of cancer, namely cancer of the womb, while in (4-55) *advice* specifies the nature of the word that is given to someone. Finally, (4-56) contains one of several terms from the legal or business sector which refer to a particular type of department or profession. Other examples of these as found in the corpus dataset are *Court of Appeal*, *Secretary of State*, or *the Department of Employment*. In addition, regarding the formal restrictions of these *of*-NPs, it is worth noting that their ConEn2 is often realised by a non-specified general noun such as *advice* in (4-55). Hence, in Subcategory BB, ConEn2 restricts the reference of the *of*-NP by identifying a specific subclass of ConEn1.

Category BB: CONEN2 QUALIFIES CONEN1

The second subcategory of Category B is similar to Subcategory BA in that ConEn2 also adds extra information about ConEn1, but instead of identifying a subclass, it merely adds a quality of ConEn1. As mentioned at the beginning of this section, this is reminiscent of the ‘Epithet’ function of the English noun phrase. It involves qualification of the non-restrictive kind (see Radden & Dirven 2007: 143), where ConEn2 merely offers additional information about ConEn1.⁶⁰ Hence, the 140 *of*-NPs of this type express the constructional meaning CONEN2 QUALIFIES CONEN1. While this meaning relationship is inherent to all *of*-NPs in Subcategory BB, the subcategory has been split up further into four groups based on the type of information that is expressed by ConEn2. Table 4-9 illustrates the frequencies of these four groups and identifies the three main types of additional information, while the fourth one is a small group of other, more marginal types.

⁶⁰ It is important to mention that the boundary between Classifier and Epithet is not perfectly clear-cut (see Bloor & Bloor 2004: 141–142; Halliday & Matthiessen 2014: 377) and sometimes it is difficult to decide which function an element belongs to. Similarly, there is a blurring of boundaries between the *of*-NPs in Subcategory BA and BB, where some of them could arguably have been put into either subcategory.

Table 4-9: The statistical frequencies of *of*-NP subcategory BB

	Frequency	Percent % within subcategory
BB1: CONEN2 QUALIFIES CONEN1 BY MATERIAL	60	42.9
BB2: CONEN2 QUALIFIES CONEN1 BY LOCATION	47	33.6
BB3: CONEN2 QUALIFIES CONEN1 BY TOPICALITY	26	18.6
BB4: CONEN2 QUALIFIES CONEN1 BY OTHER PROPERTY	7	5.0
Total (BB)	140	100.0

In the first group of BB, ConEn2 adds information in terms of what ConEn1 consists or is made up of. This has very loosely been termed ‘material’ even though there are also instances where ConEn1 consists of a group of individuals. Consider the following three examples taken from the dataset:

- (4-57) a diet of potatoes <222>
- (4-58) hurdles of metal, split oak, or wattle <815>
- (4-59) a race of gentlemen <1533>

In these examples, ConEn1 identifies the concept that is being referred to, while ConEn2 offers further information about what this concept consists of. Specifically, the *diet* in (4-57) consists of *potatoes*, while the *hurdles* in (4-58) are made up of *metal, split oak, or wattle*. Finally, (4-59) talks about a human *race* that consists of *gentlemen*. Furthermore, this type of meaning relationship where ConEn2 expresses what ConEn1 is made up of is also apparent in fixed expressions such as *House of Lords* and *House of Commons*, which appear in the dataset thrice and twice respectively.

The second group of *of*-NPs within Subcategory BB, identifies the location or origin of ConEn1, as is the case in the following three examples:

- (4-60) Mary of Nazareth <350>
- (4-61) Charles Moskos of Northwestern University <1294>
- (4-62) archbishop of Canterbury <1947>

As becomes apparent in examples (4-60) to (4-62), in this type of *of*-NP, ConEn2 always expresses a place that ConEn1 is from or is affiliated with. Indeed, in (4-60) *Nazareth* tells us where *Mary* is from, while *Canterbury*, in (4-62), refers to the place the respective *archbishop* is associated with. In the *of*-NP in (4-61), on the other hand,

ConEn2 identifies the university that ConEn1 is employed with. In most *of*-NPs of this group, ConEn1, with a few exceptions, always refers to a person or a group of people.

The third group in Subcategory BB is concerned with topicality. In other words, ConEn2 identifies what ConEn1 is about, as can be seen in the following examples:

- (4-63) a revolting memory of Alec Ardis <293>
- (4-64) the study of animal anatomy <1154>
- (4-65) a biography of Alan Blumlein <1422>

In these cases, the additional information expressed by ConEn2 identifies the subject matter of ConEn1. For example, it can be said that *the revolting memory* in (4-63) is about *Alec Ardis*, *the study* in (4-64) is on *animal anatomy*, and *the biography* in (4-65) was written about *Alan Blumlein*.

Finally, the fourth and smallest group within Subcategory BB contains ConEn2s that add further information to ConEn1 other than material, location or topicality. One example of these is given in (4-66) below, where the additional information identifies the specific age of the individual referred to in ConEn1:

- (4-66) a young man of 31 called Gary Humphreys <19>

Thus, while the above examples all contain ConEn2s that add different kinds of information to ConEn1, in all four groups of Subcategory BB the overall meaning relationship between the two conceptual entities is the same, namely that CONEN2 QUALIFIES CONEN1.

Category BC: CONEN2 IDENTIFIES CONEN1

Finally, in the 40 *of*-NPs of Subcategory BC, the nature of information about ConEn1 that is expressed by ConEn2 can be likened to the function of deixis where one specific individual representative of a concept is pointed out. In other words, in these *of*-NPs, ConEn2 is not used to refer to a specific subclass (as in Subcategory BA) or a feature of ConEn1 (Subcategory BB), but rather to identify a specific, individual ConEn1. Thus *of*-NP constructions of this type feature the constructional meaning CONEN2 IDENTIFIES CONEN1, which is shown in examples (4-67) to (4-69):

- (4-67) your letter of 4 November 1992 <258>
- (4-68) the case of Fat Man Doug Trendle <926>
- (4-69) the year of the Chantries Act <1531>

In (4-67), the intent is for the addressee to be able to identify one particular letter by reference to its date of 4 November 1992. In (4-68), on the other hand, the ConEn2 *Fat Man Doug Trendle*, limits the reference of the whole ConEn3 down to one specific case that involves a specific individual human being, i.e. the front man of the band Bad Manners, Douglas Trendle. Thirdly, in example (4-69), *the Chantries Act* identifies the specific year that is being talked about, the year in which the Chantries Act was passed by the English parliament, namely 1545.

4.3.2.3 Category C: Quantification

The third main category of *of*-NP constructions identified within the corpus dataset includes *of*-NPs where ConEn1 and ConEn2 stand in a relationship of quantification. As Table 4-10 illustrates (also see Table 4-6), there are a total of 214 instances of quantificational *of*-NPs, which amounts to 10.5% of the whole dataset.

Table 4-10: The statistical frequencies of *of*-NP category C

	Frequency	Percent % within category	Percent % across dataset
CA: CONEN1 QUANTIFIES CONEN2	186	86.9	9.1
CB: CONEN2 QUANTIFIES CONEN1	28	13.1	1.4
Total (C)	214	100.0	10.5
Total (Dataset)	2,037	-	100.0

Furthermore, Category C has been subdivided into two subcategories. The former is the more frequent of the two and contains *of*-NPs with the constructional meaning CONEN1 QUANTIFIES CONEN2. As will be illustrated below, this subcategory has been subdivided even further into six groups which classify the type of quantificational relationship between ConEn1 and ConEn2. Subcategory CB, on the other hand is far less frequent with only 28 instances, which make for 1.4% of the whole dataset. The constructional meaning of this second subcategory is the reverse of Subcategory CA, i.e. CONEN2 QUANTIFIES CONEN1. In the following, the nature of these two subcategories are discussed in more detail.

Category CA: CONEN1 QUANTIFIES CONEN2

The more frequent type of quantificational *of*-NP in Category C has, as mentioned above, been subdivided into six groups, labelled CA1 to CA6. They have been

modelled on five *of*-NP constructions previously identified by Keizer (2007: 109-116) who calls them ‘pseudo-partitives’. Thus, Category CA includes the quantifier *of*-NPs as presented in Section 2.2.2. In addition, one further, minor category (CA6) has been added. These six groups of Subcategory CA differ from one another based on the type of quantification between ConEn1 and ConEn2. Table 4-11 lists the individual constructional meanings of each and indicates their frequency within Subcategory CA.

Table 4-11: The statistical frequencies in *of*-NP subcategory CA

	Frequency	Percent % within subcategory
CA1: CONEN1 QUANTIFIES AND NUMBERS CONEN2	38	17.8
CA2: CONEN1 QUANTIFIES AND MEASURES CONEN2	33	15.4
CA3: CONEN1 QUANTIFIES AND CONTAINS CONEN2	13	6.1
CA4: CONEN1 QUANTIFIES AND CONSISTS OF CONEN2	25	11.7
CA5: CONEN1 QUANTIFIES AND GROUPS CONEN2	74	34.6
CA6: CONEN1 QUANTIFIES AND GRADES CONEN2	3	1.4
Total (CA)	214	100.0

The first type of quantificational *of*-NP is Subcategory CA1, which is the second most frequent one within Category CA, and contains ConEn1s that Keizer (2007: 109) calls ‘quantifier nouns’. They “do not indicate an exact number or amount, but can be paraphrased by means of such simple quantifiers as *many/much, few, some, several, etc.*” (Keizer 2007: 112, emphases in original). Instances of such *of*-NPs from within the corpus dataset are given in the following three examples:

- (4-70) lots of people <54>
- (4-71) a number of representative bodies <1138>
- (4-72) thousands of workers who are earning less than the average industrial wage <1325>

In these three *of*-NPs, ConEn1 quantifies ConEn2 by indicating a rough number of the concept expressed by ConEn2. Following Keizer (2007), they, together with the preposition *of*, can be replaced by the simple quantifiers *many, some* and *many* respectively. Furthermore, with nineteen occurrences, by far the most frequent central noun of ConEn1 within subcategory CA1 is *number(s)*. The second most frequent

ConEn1 entails constructions with *lots* and *a lot*, of which there are six. Other occurrences are *thousands*, *millions*, *a couple*, *a good deal*, or very idiosyncratic ones like *a fair sprinkling*.

The second group in Subcategory CA, CA2, corresponds to Keizer's (2007) measure noun construction, where ConEn1 serves "to indicate precise measures, such as *inch*, *pint*, [...] *metre* or *pound*, as well as imprecise ones, such as *amount*, *gulp*, *pile*, *dose*, *load* or *percentage*" (Keizer 2007: 113, emphases in original). Consider the following three examples of this *of*-NP construction:

- (4-73) a certain amount of animal life <127>
- (4-74) the tubful of hot water <1042>
- (4-75) a decade of conflict in the Third World <1877.b>

In these examples, each ConEn1 quantifies the respective ConEn2 by making reference to its measure, either by vague measures such as *a certain amount*, or by more concrete ones such as *a decade*.

Thirdly, Subcategory CA3 is the least frequent of Keizer's (2007) five—but only the second least frequent of the six subcategories of Category CA presented here. It contains expressions like (4-76) to (4-78) where ConEn1 quantifies ConEn2 by virtue of being a container noun, thus "limiting reference to the amount the object denoted by [ConEn1] can contain" (Keizer 2007: 113–114):

- (4-76) a box of Castile soap <33>
- (4-77) a wider packing of pea-sized gravel <711>
- (4-78) a small glass of very hot tea <1558>

Thus the quantity of *Castile soap* in (4-76), for example, is limited by the scope of space available in *a box*. While this quantity is rather vague in size, we can tell that it is probably more than a tablespoonful and less than a truckful. Note that this is also the category which our invented example *a box of kittens* as discussed in Chapter 3 would fit into. An interesting instance of this subcategory is given by *of*-NP <517> in example (4-79):

- (4-79) the empty jar of fig liquor <517>

Here, the noun *jar* within ConEn1 quantifies *fig liquor* by virtue of being a container. However, this is nulled by the adjective *empty* modifying *jar*, which reduces the

amount of ConEn2 to zero. As a result, this *of*-NP construes a sense of how much fig liquor there could have been had the jar been full by stressing its absence.

The fourth quantificational subcategory, CA4, contains ConEn1s that “indicate an amount of the substance indicated by [ConEn2]” (Keizer 2007: 115). Five examples from the dataset are given in (4-80) to (4-84), the last two of which are more idiosyncratic in nature:

- (4-80) a sheet of non-stick baking paper <94>
- (4-81) thick units of halite <653>
- (4-82) a pile of disposable nappies <801>
- (4-83) the shaft of moonlight catching his grin <738>
- (4-84) a flash of memory <1979>

For all such *of*-NPs in CA4, it can be said that ConEn1 consists of ConEn2 by the means of which the quantity of ConEn2 is limited. This is also possible for less concrete ConEn2s such as *the shaft* and *a flash* in (4-83) and (4-84) above.

The most frequent type of *of*-NP in Subcategory CA is the one in group CA5. It occurs 74 times within the corpus dataset which makes for 34.6% of Subcategory CA (see Table 4-11 above). Within this subcategory, ConEn1 quantifies ConEn2 by virtue of identifying a group of the latter. Note that, in English, the highly productive class of collective nouns, such as *a flock of sheep*, *a herd of cattle*, *a pandemonium of parrots* or *a flamboyance of flamingos*, also belong into this category.⁶¹ The following examples are instances of such typical collective nouns as found within the corpus dataset:

- (4-85) an archipelago of seven islands <298>
- (4-86) an armada of 45 US Navy warships <1220>
- (4-87) great flocks of harlequin bronzewings <1304.b>

Collective nouns such as these are more restricted in their use, as they would only appear with a specific ConEn2. For example, the collective noun *archipelago* is restricted to the semantic field of islands. However, Subcategory CA5 also contains a majority of more generic collective nouns which can be used in combination with a

⁶¹ For an extensive list of collective nouns in English, see Shulman (2009), Faulkner et al. (2013), or Rhodes (2014). Furthermore, the productive nature of these collective nouns is also illustrated by the hashtag #ModernCollectiveNouns which was trending on Twitter in late March 2016.

wider range of ConEn2s. Examples are the nouns *pair*, *group*, *series* and *collection* in the *of*-NPs in (4-88) to (4-91):

- (4-88) a pair of gloves <423>
- (4-89) Prou Leith's group of firms <473>
- (4-90) a series of switching stations <563>
- (4-91) a collection of 25 weathervanes <1759>

Other examples of ConEn1s that function as collective nouns within the category of CA5 are *set*, *host*, *range*, *bunch*, *variety*, *train*, *crowd*, *succession* or *run*, some of which are more idiosyncratic than others.

Finally, the last group of *of*-NPs within Subcategory CA is the only one of the six ones identified here that has not been previously mentioned by Keizer (2007), which might be due to its low frequency. It appears only three times within the whole corpus dataset and is thus a rather peripheral and atypical category of *of*-NP constructions. The *of*-NPs of this group fit into Subcategory CA by virtue of the constructional meaning where CONEN1 QUANTIFIES CONEN2, which they share with the other five groups above. However, in addition, this quantificational aspect is different in that ConEn1 grades ConEn2 as if on a scale. All three instances of this type are given in the examples (4-92) to (4-94):

- (4-92) too much of a softie <191>
- (4-93) a bit of an eyeful <414>
- (4-94) something of a mystery <1044>

Within these three examples, ConEn2 is either emphasised as with *too much* in (4-92) or downtoned as with *a bit* and *something* in (4-93) and (4-94) respectively. In addition, this type of *of*-NP construction appears exclusively in predicative position as becomes apparent with their cotext such as *Mrs Foster is too much of a softie to fire anyone* of concordance line <191>. ⁶²

Looking at the formal restrictions of these six groups of *of*-NPs, there is one feature that is shared by the first five groups, but not Subcategory CA6. Examining ConEn2 in each of the 22 examples (4-70) to (4-91) of the first five groups above,

⁶² This last feature of Subcategory CA6 in particular—i.e. its use in predicative position—was often mentioned as a defining feature for this type of *of*-NP by the participants in the cognitive experiment described in Chapter 6. Specifically, see Section 6.2.2.5 for reference to this phenomenon.

ConEn2 always consists of either a plural count noun or a mass noun. This aligns with the fact that the purpose of these constructions is to quantify ConEn2, which thus cannot take the form of a single count noun as this would require no quantification. This feature of ConEn2 in the first five subcategories is in contrast with the ConEn2s in the last, sixth type. In fact, in Subcategory CA6, ConEn2 always denotes a single count noun and is introduced by an indefinite determiner *a* or *an*, as is apparent in examples (4-92) to (4-94).

Category CB: CONEN2 QUANTIFIES CONEN1

In contrast to these six groups of Subcategory CA, the second subcategory of *of*-NP in Category C, reverses the quantificational relationship between ConEn1 and ConEn2 with the constructional meaning CONEN2 QUANTIFIES CONEN1.⁶³ As is shown in Table 4-10 above (also see Table 4-6), Subcategory CB only contains 28 *of*-NPs and is thus rather rare. It makes for 13.1% within Category C and for only 1.4% of the whole dataset. Consider the following four examples:

- (4-95) a total of 47 people <329>
- (4-96) a batch of 120 <957>
- (4-97) his audience of millions <1239>
- (4-98) an angle of 45° to the beam <1343>

As becomes apparent in these examples, ConEn2 always consists of a number that refers to the size of ConEn1.

In conclusion, the overall Category C contains two main subcategories of quantificational *of*-NPs. The first and more frequent one contains six different types of *of*-NP where CONEN1 QUANTIFIES CONEN2 in different ways. The second and far less frequent one turns this relationship around with the constructional meaning CONEN2 QUANTIFIES CONEN1.

4.3.2.4 Category D: Engagement

The fourth main category of *of*-NP constructions revolves around the notion of ‘event nouns’ which is always expressed by ConEn1. The category has been labelled ‘Engagement’ because in these *of*-NPs ConEn2 is always engaged (either actively or passively) in the event expressed by ConEn1. This type of *of*-NP has previously been

⁶³ This type of *of*-NP has also been recognised by Francis et al. (1998: 184–185) with their ‘magnitude group’.

identified by Lees (1968: 64–69) in his monograph on nominalisation, where he refers to them as 1st nominals of action. However, I refrain from referring to this type of *of*-NP as nominalisations. A nominalisation is defined as “a noun phrase [...] which has a systematic correspondence with a clause structure” (Quirk et al. 1985: 1288). This systematic correspondence with a clause structure stems from the fact that the head noun of such a noun phrase is thought to be deverbal, i.e. is thought to be derived from a verb, as seems to be the case in examples (4-99) to (4-101):

(4-99) the *withdrawal* of Soviet armed forces <36>

(4-100) his *investigation* of other periods <138>

(4-101) the *loss* of public confidence in official figures <607>

On first glance, the nouns given in italics in these *of*-NPs appear to be deverbal, derived from their corresponding verbs *to withdraw*, *to investigate* and *to lose*. Indeed, following Quirk et al.’s definition (1985: 1288), it is possible to construct the following corresponding clause structures for the three *of*-NPs above:

(4-102) Soviet armed forces are *withdrawn*.

(4-103) Other periods are *investigated* by him.

(4-104) Confidence in official figures is *lost* by the public.

However, as is recorded in the Oxford English Dictionary (OED 2016), while *withdrawal* is indeed derived from its verbal counterpart, the noun *loss* seems to be the source of the verb *lose*, and the noun *investigation* entered the English language as a noun from Old French and is thus not a direct nominalisation of *to investigate*, which in turn was borrowed into English from Latin. Hence, whether a noun is a nominalisation or not is not always as straightforward as it appears. Therefore, the term ‘event nouns’ is used instead to incorporate true nominalisations but also other nouns that convey a process or event, such as *birth*, *death*, or, as we shall see below, even historical events like *Hiroshima* (also see Fontaine 2015).

In *of*-NPs of Category D, the noun appearing in ConEn1 is thus always construed as an event that ConEn2 can engage in. As we shall see, this engagement can be of two different kinds: either passive or active. More precisely, if the *of*-NPs were to be paraphrased by a clause with ConEn2 in subject position—as has been done in examples (4-102) to (4-104)—then the ‘event’ expressed by ConEn1 either appears as a passive or an active verbal process. Therefore, Category D is split into two

subcategories distinguishing between a passive and an active involvement of ConEn2 in the event expressed by ConEn1.

Table 4-12: The statistical frequencies of *of*-NP category D

	Frequency	Percent % within category	Percent % across dataset
DA: CONEN2 IS PASSIVELY ENGAGED IN CONEN1	245	86.9	12.0
DB: CONEN2 IS ACTIVELY ENGAGED IN CONEN1	37	13.1	1.8
Total (D)	282	100.0	13.8
Total (Dataset)	2,037	-	100.0

As is shown in Table 4-12, it is far more frequent for ConEn2 to be involved in the event of ConEn1 passively than actively. Furthermore, with a frequency of 245, Subcategory DA also makes for the second most frequent type of *of*-NP across the whole corpus dataset (12%). These two subcategories are discussed in more detail in the following.

Category DA: CONEN2 IS PASSIVELY ENGAGED IN CONEN1

The *of*-NPs of Subcategory DA feature the constructional meaning CONEN2 IS PASSIVELY ENGAGED IN CONEN1.⁶⁴ Examples of this type of *of*-NP have been given in (4-99) to (4-101) above, but for further illustration consider examples (4-105) to (4-108) below:

- (4-105) the official opening of the building <199>
- (4-106) the inhibition of macrophage anti-schistosome functions <315>
- (4-107) the occupation of Siberia <363>
- (4-108) the birth of his son <1037>

In these *of*-NPs, each ConEn2 is passively engaged in the event expressed by ConEn1. In (4-105), *the building* is officially *opened*, while in (4-106) *macrophage anti-schistosome functions* are *inhibited* and in (4-107) *Siberia* is being *occupied*. Finally, in (4-108) *his son* is passively involved in the event of being given *birth*.

⁶⁴ Quirk et al. (1985: 322) call this type of *of*-NP an ‘objective genitive’ and it is also recognised by Francis et al. (1998: 178–180) with their ‘construction group’, as well as parts of their ‘rise and fall group’ (182). Furthermore, this type also includes Mackenzie’s (1996) ‘productive nominalizations’ such as *Andy’s mowing of the lawn*.

All of the ConEn1s in these *of*-NPs can easily be recognised as event nouns. However, not all instances of Subcategory DA, such as the following example, are as straightforward:

(4-109) a Hiroshima of the human spirit <639>

Under normal, non-metaphorical circumstances, the noun *Hiroshima* is either used as a noun referring to the Japanese city, or it is used as an event noun referring to the atomic bombing of the city in 1945. In example (4-109), however, this latter event noun is extended and is used figuratively in combination with the grammatical construction of Subcategory DA. As a consequence, the meaning of *of*-NP <639> is that, metaphorically, the human spirit is maltreated to a degree that is reminiscent of the destruction left behind by the historic event in Hiroshima at the end of World War II.

Category DB: CONEN2 IS ACTIVELY ENGAGED IN CONEN1

Subcategory DB, which only makes up 13.1% of Category D with a frequency of 37, constitutes the semantic counterpart to Subcategory DA, where CONEN2 IS ACTIVELY ENGAGED IN CONEN1.⁶⁵ Examples of this type of *of*-NP are given with the following four expressions:

(4-110) the death of his wife <449>

(4-111) the intervention of his uncle Guntram <690>

(4-112) the relapse of the disease <1328.b>

(4-113) the outbreak of war <1878>

Again, in these *of*-NPs ConEn2 is engaged in a process that is expressed by ConEn1. Unlike Subcategory DA, however, ConEn2 here takes on an active role, where either *his wife died* (4-110), *uncle Guntram intervened* (4-111), *the disease relapsed* (4-112), or *war broke out* (4-113).

Hence, in both Subcategory DA and DB, the semantic relationship between the two conceptual entities is similar in that they both designate ConEn2 to be involved in the event of ConEn1. The two categories differ in whether ConEn2 takes on an active or a passive role within this event. This semantic distinction is marked within the

⁶⁵ This type of *of*-NP is termed ‘subjective genitive’ by Quirk et al. (1985: 321), and is partially included in Francis et al.’s (1998: 182) ‘rise and fall group’ as well as their ‘flow group’ (182-183).

meaning relationship attributed to the two grammatical constructions, and is not necessarily dependent on the event nouns involved. This can be illustrated by the following two examples:

(4-114) a great *expansion* of European wealth <122>

(4-115) the *expansion* of exports <912>

In example (4-114), the ConEn2 *European wealth* is expanding, taking on an active role in an intransitive process of expanding. In example (4-115), on the other hand, ConEn2 *exports* takes on a passive role while another participant is actively expanding the exports in question. Hence, whether an *of*-NP is a member of Category DA or DB cannot be determined based on the type of ConEn1 involved. Rather, ‘active’ and ‘passive’ are part of the meaning tied to the grammatical construction involved.

4.3.2.5 Category E: Selection

The fifth main category of *of*-NPs identified within the corpus dataset involves the notion of selection. The notion of ‘selection’ has been borrowed from Fawcett’s (2007) paper on the ‘selection principle’, which analyses a broad range of *of*-NPs as consisting of a ‘widest referent’ and a narrower ‘substantive referent’ (see Section 2.2.6.2). In terms of selection it can be said that the substantive referent is selected from within the reference of the widest referent. In other words, the reference of the substantive referent is more restricted than that of the widest referent. However, while Fawcett (2007) uses this principle to analyse many different types of *of*-NPs, the term is here used only to refer to two subcategories of *of*-NPs: Subcategories EA and EB. What both of these subcategories have in common is that the reference of the widest referent (ConEn2) is reduced to refer to only a selected portion of it. The difference between the two subcategories is that, in Subcategory EA, the reference of ConEn2 is restricted such that ConEn3 as a whole only refers to a *subset* of ConEn2, while in Subcategory EB ConEn3 only refers to a *fraction* of ConEn2. This difference between these two subcategories is discussed in more detail below.

As illustrated in Table 4-13, both subcategories are almost equal in frequency with Subcategory EA being slightly more frequent at 122 instances, which makes up for 6% of the whole dataset.

Table 4-13: The statistical frequencies of *of*-NP category E

	Frequency	Percent % within category	Percent % across dataset
EA: CONEN3 IS A SUBSET OF CONEN2	122	53.5	6.0
EB: CONEN3 IS A FRACTION OF CONEN2	106	46.5	5.2
Total (E)	228	100.0	11.2
Total (Dataset)	2,037	-	100.0

Category EA: CONEN3 IS A SUBSET OF CONEN2

As mentioned above, in Subcategory EA the meaning relationship between ConEn2 and ConEn1 is such that ConEn1 reduces the reference of ConEn2 to a more selective subset. Specifically, ConEn2 of these *of*-NPs always denotes a group of individuals from which a select number is then selected. As a result, ConEn3—i.e. the overall *of*-NP—only refers to a subset of this group. Thus, these *of*-NPs are recognised by their meaning relationship of CONEN3 IS A SUBSET OF CONEN2.⁶⁶ Consider the following examples taken from the corpus dataset:

- (4-116) one of the departments in the Store <295>
- (4-117) the greatest of all musico-technological revolutions of our times <677.a>
- (4-118) most of Baku's Armenian community <1468>
- (4-119) none of those famous victories <1659>

As illustrated by these *of*-NPs, the ConEn2 in Subcategory EA always denotes a group of something. Due to this, the structure of ConEn2 is restricted to plural nouns such as *departments*, *revolutions* and *victories* in (4-116), (4-117) and (4-119) respectively, unless the noun in ConEn2 is a term that inherently refers to a group of things. In these cases, such as *community* in (4-118), the noun in ConEn2 can also be singular. Other examples of such 'group nouns' used in ConEn1 of Subcategory EA in the corpus dataset are *group*, *troupe*, *tribe* or *staff*.

ConEn1, on the other hand, selects a subset from ConEn2 by two different means: Most often, it refers to a specific or non-specific number of individuals within ConEn2 as is the case with *one* and *most* in (4-116) and (4-118) above. Note that it is

⁶⁶ This type of *of*-NP is also called 'partitive NP' by Keizer (2007: 65–70). Also see Stockwell et al. (1973: 114–122) and Hoeksema (1996), as well as Section 2.2.3.

even possible for a number of zero individuals to be selected as is done by *none* in (4-119). In addition, as is exemplified by (4-116), (4-118) and (4-119), usually ConEn1 is formally realised by a pronoun. The second, less frequent means of selection is by a superlative adjective (also see Shin 2016: 6n3). In (4-117), *all musico technological revolutions of our times* are compared with one another based on their greatness and only *the greatest* is selected as a subset for the referent of ConEn3. Hence, overall, category EA contains *of*-NPs where a number of individuals are selected by ConEn1 from within a group of ConEn2 to create the more restricted reference of ConEn3.

Category EB: CONEN3 IS A FRACTION OF CONEN2

Subcategory EB differs from EA in that ConEn2 does not denote a group of individuals. Rather, it is construed as a whole, single entity from which only a particular fraction is being selected. Thus, these *of*-NPs express the constructional meaning CONEN3 IS A FRACTION OF CONEN2, as is illustrated by the following examples.

(4-120) the whole of the West Midlands region <93>

(4-121) the rest of the city <202>

(4-122) much of the German admiral's flag code <737>

(4-123) 50 per cent of people <1818>

In these examples, ConEn2 represents an entity from which a fraction is being selected by ConEn1. This fraction can vary in size, as is shown by example (4-120) where even *the whole* of ConEn2 is being selected. Furthermore, it is also possible for the fraction to be expressed explicitly with an indication of percentages as in (4-123). This latter type of selection is the most frequent one in Subcategory EB as it occurs within 25% of this kind of *of*-NP construction.

4.3.2.6 Category F: Apposition

In the sixth main category of *of*-NPs, ConEn2 is said to be ConEn1. This category is split up into three subcategories. The first of these subcategories, but also—to a lesser extent—the second, relates to a type of *of*-NP that has been discussed by various other scholars (e.g. Quirk & Greenbaum 1973: 1284; Keizer 2007: chapter 4) within the broader field of apposition.⁶⁷ The third, on the other hand, has very popularly been

⁶⁷ For a general overview of previous research on apposition and a discussion thereof, see Acuña-Fariña (2009) and also Meyer (1992).

discussed by scholars such as Austin (1980), Napoli (1989), and, most notably, Aarts (1994, 1998) under the notion of ‘binominal noun phrase’ as presented in Section 2.2.5 on appraisal *of*-NPs.⁶⁸ Examples of the first and third type of these *of*-NPs, taken from Quirk et al. (1985: 1284–1285), are given below in (4-124) and (4-125) respectively:

(4-124) the city of Rome

(4-125) an angel of a girl

In both of these examples, ConEn2 is said to be ConEn1. Specifically, it can be said that *Rome* is a city, and *the girl* is an angel. As we shall see below, however, there is a difference in the degree of subjectivity. While these two types of *of*-NP have mostly been discussed separately, they have marginally also been related to one another. Quirk et al. (1985: 1284–1285), for example, call them both appositions with a distinction between objective and subjective appositions. Similarly, for both of these types of *of*-NP, Halliday & Matthiessen (2014: 393–394) identify the relationship between ConEn1 and ConEn2 as one of elaboration where ConEn1 elaborates on ConEn2 (adopting a more structural point of view, they use the concepts ‘Head’ and ‘Thing’). Moreover, they make a distinction between the two types regarding the role of ConEn1. In *of*-NPs such as (4-126) above, ConEn1 is said to be a Classifier, whereas in (4-127) they would analyse it as Epithet.⁶⁹

This view that these two types of *of*-NPs belong to the same main category of *of*-NPs, i.e. *of*-NPs of apposition, is supported here. However, rather than only having two, these expressions are split up into three subcategories, with a new intermediate subcategory. Table 4-14 illustrates the frequencies of these three subcategories.

⁶⁸ The notion of ‘binominal noun phrase’ is an unfortunate choice of term because it could be applied to almost any type of *of*-NP discussed within this study and not just to this one individual type. Therefore, this term has been avoided here.

⁶⁹ For a definition of Classifier and Epithet, see Bloor & Bloor (2004: 141–142) or Halliday & Matthiessen (2014: 376–378).

Table 4-14: The statistical frequencies of *of*-NP category F

	Frequency	Percent % within category	Percent % across dataset
FA: CONEN2 IS CONEN1 INHERENTLY	52	54.7	2.6
FB: CONEN2 IS CONEN1 NON-INHERENTLY	41	43.2	2.0
FC: CONEN2 IS CONEN1 SUBJECTIVELY	2	2.1	0.1
Total (F)	95	100.0	4.7
Total (Dataset)	2,037	-	100.0

It becomes apparent that Subcategory FA and FB are far more frequent than Subcategory FC. While FA and FB, both with similarly high frequencies, make up for 97.9% of Category F, Subcategory FC only contains two instances of *of*-NPs within the corpus dataset. Interestingly, despite its rarity, it is this subcategory that has received a lot of attention in the past (see Section 2.2.5). In the following, the three subcategories and their semantic as well as structural nature are presented on an individual basis.

Category FA: CONEN2 IS CONEN1 INHERENTLY

Firstly, Subcategory FA contains *of*-NPs where there is a straightforward, inherent relationship of elaboration between ConEn1 and ConEn2. It is these *of*-NPs that Quirk et al. (1985: 1284) call ‘objective apposition’. They have been identified in the corpus dataset by the means of the two yes/no-questions *Is ConEn2 ConEn1?* And *is this relationship inherent in ConEn2?* which capture the constructional meaning CONEN2 IS CONEN1 INHERENTLY.⁷⁰ See, for example, the three *of*-NPs in (4-126) to (4-128):

(4-126) the state of California <564>

(4-127) the isles of Oléron and Ré <1176>

(4-128) his kingdom of Avalon <1404>

In these three examples, ConEn2 can be said to be ConEn1. Moreover, there is an objective, inherent relationship between the two. For instance, it is part of the definition of *California* that it is a state; it is inherent to *Oléron and Ré* that they are islands; and it is common knowledge that *Avalon* is a kingdom of Arthurian legend.

⁷⁰ This type of *of*-NP is also included in Francis et al.’s (1998: 185) ‘town group’.

Hence, the relationship between ConEn1 and ConEn2 in category FA is inherent in the meaning of ConEn2.

Formally, ConEn2 commonly consists of a proper noun, as is the case in examples (4-126) to (4-128), but it can also contain nouns that refer to abstract concepts, as in the following three examples:

(4-129) the job of project manager <1192>

(4-130) the discipline of hermeneutics <1396.c>

(4-131) the concept of accountability <1941>

A notable feature of this category is that the determiner of ConEn1 is always definite. In fact, 48 out of the 52 *of*-NPs in category FA begin with the definite article *the*. This relates to the fact that, in this type of *of*-NP, ConEn2 has got a status of singularity. In other words, there is only one *California* and therefore it is unnecessary to establish which *California* is meant. This allows for the use of a definite determiner. If we were to use an indefinite article, as in *a state of California*, this would imply that there are states *within* California, which clearly is not the case. Similarly, although on a more abstract level, there is only one discipline that is called *hermeneutics*, only one concept we would call *accountability*, and within a company's project team there is only one *project manager*.

Thus, overall, this category of *of*-NPs consists of ConEn2s that are elaborated on by their respective ConEn1. More specifically, this relationship of elaboration is purely objective and an inherent part of the meaning of ConEn2.

Category FB: CONEN2 IS CONEN1 NON-INHERENTLY

In Subcategory FB, the same relationship of elaboration between ConEn1 and ConEn2 can be found as well as the same formal restrictions as in Subcategory FA, although ConEn2 can contain a wider range of types of noun phrases.⁷¹ The difference between the two subcategories is that in FB the relationship between ConEn1 and ConEn2 is not inherent to the meaning of ConEn2. Consider the following examples:

(4-132) the right of cancellation <533>

(4-133) the exceptionally high price of 400 talers <742>

(4-134) the prospect of emigration <1052>

⁷¹ This type of *of*-NP is also referred to as the 'issue group' by Francis et al. (1998: 183–184)

In these examples, the basic relationship of elaboration still holds. It is still possible to say that *cancellation* is a right, *400 talers* is an exceptionally high price, and *emigration* is a prospect. However, in contrast to Subcategory FA, this relationship is context dependent. For example, *400 talers* is only steep for certain purchases. If I were to buy a house with *400 talers*, it would be extremely cheap. Similarly, *emigration* is only a *prospect* if someone is expecting it to happen sometime in the future. In another context, it could also be viewed as an impossibility. Thus, unlike Subcategory FA, here the relationship between ConEn1 and ConEn2 is not inherent in the meaning of ConEn2. Thus, these *of*-NPs express the constructional meaning CONEN2 IS CONEN1 NON-INHERENTLY.

Furthermore, note that the relationship between the two conceptual entities in the above examples is still objective in nature. Yet, within the same category, it is also possible for ConEn1 to carry emotional value as is shown by example (4-135):

(4-135) the annoyance of air traffic suffered by all city dwellers <1581>

In this example, *air traffic* is identified as *an annoyance*. Hence, ConEn1 carries emotional value and is more subjective. While this is not a common feature within Subcategory FB, it is nevertheless possible for it to appear, which lies in contrast with Subcategory FA where the relationship between ConEn1 and ConEn2 is always purely objective.

Category FC: CONEN2 IS CONEN1 SUBJECTIVELY

This notion of subjectivity—as sometimes encountered in *of*-NPs of Subcategory FB—is more prominent in Subcategory FC. In fact, the expressions in this subcategory often consist of a purely subjective and evaluative relationship between ConEn1 and ConEn2 (see Aarts 1998: 121; Keizer 2007: 86). As discussed in Section 2.2.5 on ‘appraisal *of*-NPs’, this type of *of*-NP has been given a lot of attention in the past (see Austin 1980; Quirk et al. 1985: 1284–1285; Napoli 1989; Aarts 1994; 1998; Keizer 2007: chapter 5) even though, as shown in Table 4-14 above, it is a very rare phenomenon. As shown in Section 2.2.5, structurally, these *of*-NPs mostly consist of a ConEn1 that contains the indefinite article *a* or sometimes a demonstrative or possessive determiner. Only rarely does the definite article *the* appear in this position (see Napoli 1989: 211). What is more, ConEn2 also always takes the indefinite article *a*, unless, in rare cases, it takes the form of a plural noun thus requiring no determiner.

However, the two instances of this *of*-NP construction found in the corpus dataset are both very atypical examples. They are both given below in examples (4-136) and (4-137):

- (4-136) that total fairy-tale of me wanting to get my hands on Swift Investments
<518>
(4-137) old bones of words <1492>

In terms of formal restrictions, these examples do not follow the typical pattern outlined by the previous literature. Indeed, ConEn2 in (4-136) consists of neither a singular noun introduced by the indefinite article *a*, nor of a plural noun. Instead, it is a non-finite clausal entity which, however, could easily be replaced by an indefinite singular noun as in *that total fairy-tale of a rumour*. In (4-137), on the other hand, ConEn1 takes the form of a plural noun, which, according to Quirk et al. (1985: 1285) is impossible. Semantically, however, both of these *of*-NPs follow the typical pattern of Subcategory FC, namely that ConEn2 is identified as ConEn1, but that this relationship is purely subjective. Hence, the *of*-NPs of Subcategory FC express the constructional meaning CONEN2 IS CONEN1 SUBJECTIVELY.

4.3.2.7 Category G: Displacement

Category G groups together three subcategories where the meaning relationship between ConEn1 and ConEn2 is one of displacement. As illustrated by Table 4-15 (also see Table 4-6), this category occurs 104 times within the corpus dataset.

Table 4-15: The statistical frequencies of *of*-NP category G

	Frequency	Percent % within category	Percent % across dataset
GA: CONEN3 IS A REPRESENTATION OF CONEN2	64	61.5	3.1
GB: CONEN3 IS AN INSTANCE OF CONEN2	21	20.2	1.0
GC: CONEN3 IS AN INDEX OF CONEN2	19	18.3	0.9
Total (G)	104	100.0	5.1
Total (Dataset)	2,037	-	100.0

Table 4-15 shows that Category G is made up of three subcategories, of which Subcategory GA is the most frequent with 61.5%.

The notion of ‘displacement’ refers to the fact that in these *of*-NPs ConEn1 is used to merely hint at the existence of ConEn2, which is done in three different ways, namely by representation, instantiation and indexicality, as will be discussed in the three following sections.

Category GA: CONEN3 IS A REPRESENTATION OF CONEN2

The first and most frequent subcategory of displacement *of*-NPs contains expressions where ConEn3 is *not* ConEn2 but merely a representation of it.⁷² Thus, the *of*-NPs of this construction feature the meaning relationship CONEN3 IS A REPRESENTATION OF CONEN2, as is shown in (4-138) to (4-140):

(4-138) a picture of my mother <613>

(4-139) a parody of the sacred word <789>

(4-140) my view of these objectives <1666>

In these *of*-NPs, ConEn1 identifies a representation of ConEn2. For example, in (4-138) *the mother* who is being referred to is not actually present, but merely depicted in *a picture*. Similarly, *the parody* in (4-139) is a representation of *the sacred word* (a representation coloured by subjective opinion), and in (4-140) it is not *the objectives* that are being talked about but merely the utterer’s personal view on them.

One special instance of this subcategory that has already been alluded to in Section 4.3.2.1 on Subcategory AF above is the one given in (4-141):

(4-141) the body of Michael Chatfield <861>

This *of*-NP has been categorised into Subcategory GA because, even though the body of Michael Chatfield is clearly present, Michael Chatfield—being dead—no longer exists. Thus, ConEn3, *the body of Michael Chatfield*, is merely a representation of ConEn2, the late Michael Chatfield. Thus, in Subcategory GA, the referent of ConEn3 is displaced from the referent of ConEn2 by the means of representation.

Category GB: CONEN3 IS AN INSTANCE OF CONEN2

A similar form of displacement is apparent in the relationship between ConEn1 and ConEn2 in Subcategory GB. Instead of representation, however, the effect of displacement is achieved by the means of instantiation. In fact, these *of*-NPs express

⁷² This type of *of*-NP is also covered by Fawcett’s (2007: 196–197) ‘representational determiner’ and by Francis et al.’s (1998: 180–181) ‘diagram group’.

the constructional meaning CONEN3 IS AN INSTANCE OF CONEN2, as is shown by examples (4-142) to (4-144):

- (4-142) cases of domestic violence <26>
- (4-143) public displays of affection <1140>
- (4-144) a gross example of society's inadequacy to cope with its members
<1709>

In these three *of*-NPs, ConEn1 identifies an instance of ConEn2. Specifically, (4-142) does not refer to domestic violence in general, but merely to specific cases or instances thereof. Similarly, (4-143) refers to specific instances of affection, namely those that are displayed publicly, while (4-144) identifies but one instance, an example, of society's inadequacy to cope with its members. Hence, in Subcategory GB, displacement is achieved by the means of instantiation.

Category GC: CONEN3 IS AN INDEX OF CONEN2

Finally, in Subcategory GC, ConEn1 indirectly refers to the existence of ConEn2 by the means of indexicality. In other words, these *of*-NPs display the constructional meaning CONEN3 IS AN INDEX OF CONEN2. The notion of 'index' is used here in the sense of Saussure's (2006 [1916]) 'indexical sign' such as smoke, which is taken to be a direct indication of the presence of fire. The same type of indexical relationship can be found between ConEn1 and ConEn2 within Subcategory GC, where the presence of ConEn2 can be deduced from the presence of the whole ConEn3. See examples (4-145) to (4-147):

- (4-145) the sound of curlews <10>
- (4-146) signs of God's temporary displeasure with people <674>
- (4-147) the smells of fried bacon and toasted bread <1919>

In these three examples, the presence of the three ConEn2s is only given through their relationship with their respective ConEn1 and thus the presence of ConEn3 as a whole. ConEn2, however, is not present in the immediate situation. For example, in (4-145), we can only be sure that any curlews are in the vicinity, because their sounds function as an index that points towards their nearby existence. Thus, in Subcategory GC, the displacement between ConEn3 and ConEn2 is achieved by the means of an indexical relationship.

4.3.2.8 Category H: Typification

The eighth main category of *of*-NPs includes expressions where the constructional relationship between ConEn1 and ConEn2 is one of typification. This category contains *of*-NPs that have previously been discussed by other scholars⁷³ and have been presented in Section 2.2.4 as SKT *of*-NPs. These discussions have, however, only focused on the ConEn1s *sort*, *kind*, and *type*, whereas Category H shows that there is a multitude of other ConEn1s that fit into the same category of typification, all expressing the constructional meaning CONEN3 IS A TYPE OF CONEN2. As illustrated by Table 4-16, this category contains 75 *of*-NPs, which amounts to 3.7% of the whole dataset (also see Table 4-6).

Table 4-16: The statistical frequencies of *of*-NP category H

	Frequency	Percent % across dataset
H: CONEN3 IS A TYPE OF CONEN2	75	3.7
Total (Dataset)	2,037	100.0

Examples of the above-mentioned SKT expressions have also been found within the corpus dataset, as is shown in the following three examples.

(4-148) the same sort of reaction <1898>

(4-149) my kind of social anthropology <999.b>

(4-150) the type of girl she was <1090>

In all of these examples ConEn1, containing the nouns *sort*, *kind* and *type*, selects a type of ConEn2. In other words, it indicates that there is more than one type of the concept expressed by ConEn2, only one of which is being referred to with the overall ConEn3.

However, the analysis of the expressions within Category H has shown that, next to *sort*, *kind* and *type*, there is a wide array of other nouns that can appear within this category's ConEn1, which has also been recognised by Francis et al. (1998: 197). In fact, as is illustrated by Table 4-17, *sort*, *kind* and *type* only make up for 42.5% of

⁷³ See Keizer (2007: chapter 7), Davidse et al. (2008), Brems & Davidse (2010), Brems (2011), and Breban (2011).

Category H, which means that more than half of this category consists of more peripheral examples overlooked by previous literature on SKT expressions.

Table 4-17: The frequency of the different nouns within ConEn1 of Category H

Noun	Frequency	Percent %
type(s)	15	20.0
form(s)	14	18.7
kind(s)	8	10.7
sort(s)	8	10.7
species	4	5.3
method(s)	3	4.0
version(s)	3	4.0
point(s)	3	4.0
area(s)	2	2.7
other	15	20.0
Total (H)	75	100.0

What is more, Table 4-17 shows that the second most frequent noun within ConEn1 of this construction is *form* or *forms*, outnumbering both *kind* and *sort*. This illustrates the importance of conducting an overall corpus search, highlighting the frequencies of individual types of *of*-NPs and identifying new ones that have so far been overlooked. The following examples contain some of these other typification *of*-NPs including one example of *forms* within ConEn1.

(4-151) most forms of skin cancer <937>

(4-152) the three species of zebras shown opposite <619.b>

(4-153) previously tolerated methods of fund-raising <760>

(4-154) a delicate shade of rose <1839>

In these four examples, the nouns *forms*, *species*, *methods* and *shade* in ConEn1 all take on the function of selecting a type of ConEn2.

Furthermore, as is illustrated by the above examples, all 75 *of*-NPs within Category H are always accompanied by a ‘type specification’, which is realised either by a pre- or postmodifier, or by a determiner (e.g. possessive, demonstrative or interrogative). For example, in (4-148) above, the type of reaction that is being referred to is specified by the adjectival premodifier *same* in ConEn1. In (4-149), the type

specification is evoked by the possessive determiner *my*, while in (4-150) that effect is achieved by the postmodifying subordinate clause *she was*. In the other four typification *of*-NPs given above, it is realised by the means of the quantifying determiner *most* in (4-151), the postmodifier *shown opposite* in (4-152), or the premodifiers *previously tolerated* in (4-153) and *delicate* in (4-154). Finally, it is important to note that all of the 75 instances within Category H belong to the referential type of SKT *of*-NPs, even though, as presented in Section 2.2.4, there are four other types as well, including their function as downtoners. The fact that these types of *of*-NPs were not found in the dataset can either be interpreted as them being rather rare, or, more likely, as them being more common in spoken rather than written language. However, an investigation of this distribution is left for further research.

4.3.2.9 Category I: Election

The last main category of *of*-NPs within the corpus dataset is Category I. As Table 4-18 illustrates (also see Table 4-6), it is the rarest of them all, with only two occurrences overall.

Table 4-18: The statistical frequencies of *of*-NP category I

	Frequency	Percent % across dataset
I: CONEN1 IS THE BEST WITHIN CONEN2	2	0.1
Total (Dataset)	2,037	100.0

Despite its low frequency, this type of *of*-NP was given its own category because it displays its own, unique and very specific meaning relationship between ConEn1 and ConEn2. The constructional meaning of this particular type of *of*-NP is that ConEn1 is elected or announced as the best of its kind within the period of ConEn2, i.e. CONEN1 IS THE BEST WITHIN CONEN2. The two instances of this *of*-NP type are given in (4-155) and (4-156):

(4-155) single of the week <1454>

(4-156) the goal of the week <1910>

If we take the cotext of these expressions into consideration (see Chapter 5 on the cotextual analysis), the relationship between ConEn1 and ConEn2 becomes clear. In

(4-155), the single ‘Get Me’ by Dinosaur Jr has been ‘elected’ hit single, and thus the best single amongst many, of the current week within which the radio broadcast took place. Similarly, in (4-156) the football goal that won United the match against Stoke is identified as the most noteworthy goal of the week.⁷⁴ Formally, both conceptual entities are restricted to a definite noun, which is often marked by the definite article *the*. This is due to the fact that in ConEn1 there can only be *one* best one. In addition, ConEn2 always refers to a specific time period.⁷⁵

In conclusion, the above Sections 4.3.2.1 to 4.3.2.9 have presented the nine main categories of *of*-NPs and their individual constructional meaning relationships between ConEn1 and ConEn2 as found within the corpus dataset. Section 4.3.3 moves on to briefly introduce another *of*-NP phenomenon that was observed within the dataset, and Section 4.4 then draws all of the above *of*-NP categories together and relates this chapter’s results back to the research aims of this study.

4.3.3 The phenomenon of *of*-NP clusters

One final *of*-NP phenomenon found in the corpus dataset that shall be addressed here are the *of*-NP clusters previously mentioned in Sections 4.1.2 and 4.3.1.2. As explained, these clusters contain two or more *of*-NPs that are embedded within each other. As is illustrated by Table 4-4 on page 84 above, the corpus dataset contains *of*-NP clusters of up to four levels of embedding, although most clusters consist of a pair of *of*-NPs only. The frequency of these *of*-NP clusters is repeated here in Table 4-19:

⁷⁴ Note that, if considered out of context, *the goal of the week* can also be interpreted as, say, a company’s aim for the week, i.e. as *this week’s goal*, in which case ConEn1 and ConEn2 would enter a meaning relationship of possession (i.e. Category AF).

⁷⁵ Although examples (4.153) and (4.154) make it seem as if ConEn2 of Category I was restricted to the expression *the week*, it will become apparent within the cognitive experiments of Chapter 6 that other time periods such as *the evening* or *the day* are also possible.

Table 4-19: The frequency of *of*-NP clusters of different levels of complexity (2)

		Frequency
Single <i>of</i> -NPs		1,703
<i>of</i> -NP clusters	Pairs	168
	Triplets	9
	Quadruplets	1
Total		1,881

In the corpus dataset (Appendix A) the different types of these clusters are identified in columns AR and AS. An example of an *of*-NP cluster is given in (4-9) on page 77 above, repeated here as (4-157). Together with example (4-158), it shows how the two embedded *of*-NPs were split up within the corpus dataset and counted as two individual *of*-NPs numbered <1.a> and <1.b>. The central relator *of* is underlined in both examples:

(4-157) membership of the National Union of Students <1.a>

(4-158) the national Union of Students <1.b>

Note that this subdivision was only effected if the embedded *of*-NP—in this case <1.b>—constituted the whole ConEn1 or ConEn2 of the superordinate *of*-NP. In other words, the whole ConEn2 of (4.158) is a whole *of*-NP in its own right, i.e the one given in (4-158). In other cases, the embedded *of*-NP appears lower within the syntactic structure of the superordinate expression, as is evident in examples (4-159) and (4-160):

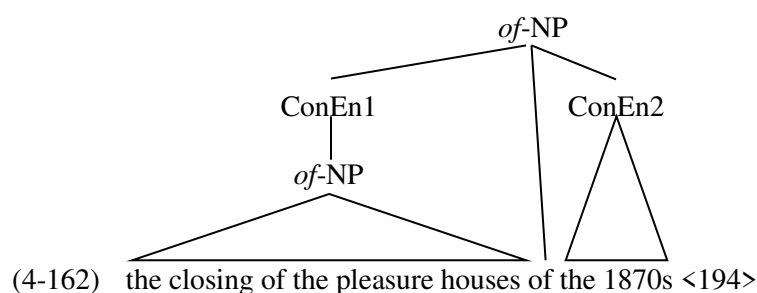
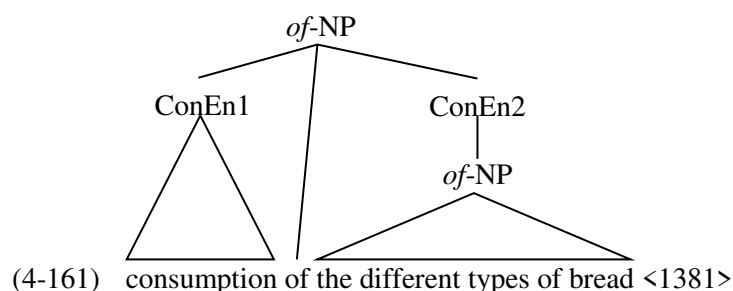
(4-159) standards of thought or behaviour which only a part of us declares as
inviolable <190>

(4-160) groups of from four to six youngsters from the first and second years of
several project schools <1567>

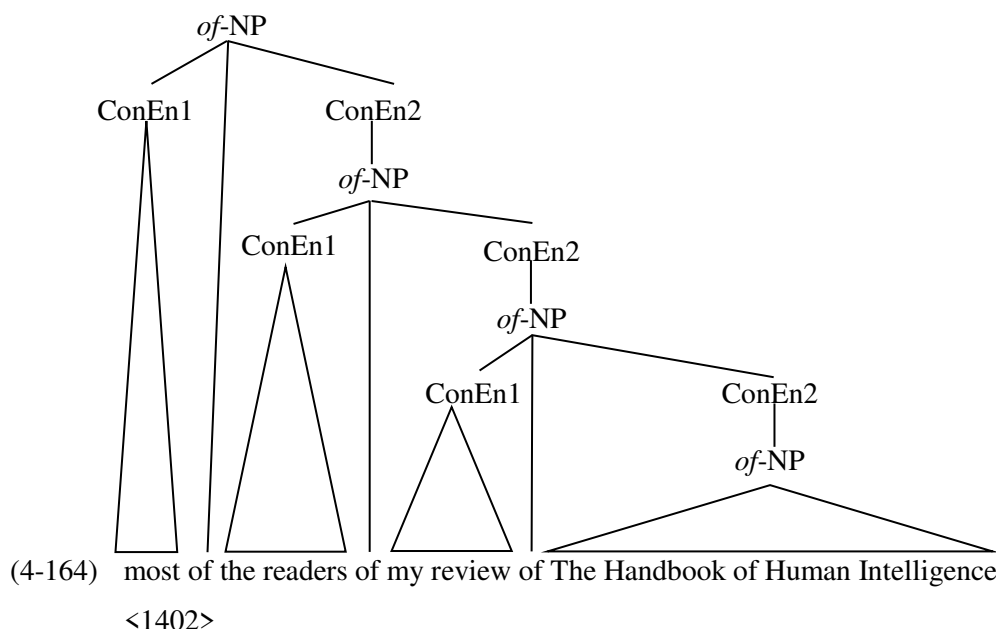
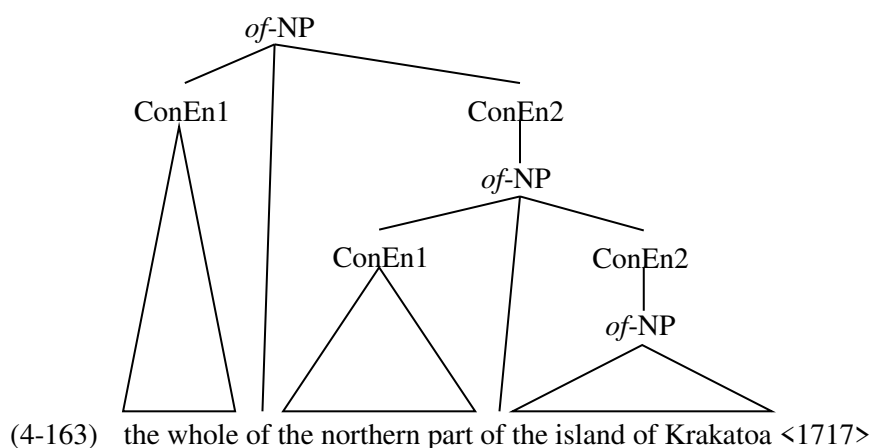
In (4-159), the embedded *of*-NP *a part of us* is part of a subordinate clause that is modifying the superordinate *of*-NP *standards of thought or behaviour*. Similarly, in (4-160), the *of*-NP *the first and second years of several project schools* is part of a prepositional phrase that is instigated by the preposition *from*, which in turn modifies the head noun *youngsters* of ConEn2. Concordance lines of this kind have not been

split up into two. This was only done in the case of the former type of embedding where the two *of*-NPs form a close cluster.

As shown in Table 4-19 above, there are 168 *of*-NP cluster pairs in the corpus dataset. Structurally, these pairs come in two different forms. The subordinate *of*-NP is embedded either in ConEn2 or in ConEn1, as is shown in the two tree-diagrams in (4-161) and (4-162):



The structure given in (4-161) is by far more frequent than the one in (4-162). Indeed, the subordinate *of*-NP is embedded in ConEn1 in only six of the 168 cluster pairs. In the remaining 162 pairs, it is embedded in ConEn2. Thus, the structure in (4-161) is the dominant form for *of*-NP clusters in English. This is confirmed when looking at the nine *of*-NP cluster triplets and the one quadruplet as found in the corpus dataset. All of them are made up solely of embedding within ConEn2. The structures of a triplet and the quadruplet are given in (4-163) and (4-164) respectively.



The tree-structures in (4-163) and (4-164) show that embedding in *of*-NP cluster triplets and quadruplets is consistently rightward—at least as far as the occurrences in the corpus dataset are concerned. This clustering behaviour is consistent with the rightward embedding of Fawcett’s (2007) different types of determiners as presented in Section 2.2.6.2. Furthermore, it has also been found by Fauconnier & Turner (2003: 149–154), who describe the phenomenon of *of*-NP clusters (they call them ‘Y expressions’) as follows:

we can compose Y expressions by letting the open-ended connectors attach to other roles. That is, what follows the “of” in the first Y expression can be another Y expression, for as long as we like. (Fauconnier & Turner 2003: 149)

While these two studies confirm the tendency towards rightward embedding within *of*-NP clusters, this corpus study has also shown that leftward embedding occurs too—within *of*-NP pairs at least—albeit less frequently. However, for a more representative statement on embedding and its restrictions within such clusters, future research would need to analyse a more substantial number of *of*-NP clusters including more triplets and quadruplets like the ones given above.

What is more, further research on the semantics of these clusters is needed, analysing which categories of *of*-NPs—as presented in Section 4.3.2—combine with one another. From the 178 clusters found within the corpus dataset, no obvious patterns of combination can be discerned, which could, however, be confirmed with a more detailed analysis of a larger dataset. With the low number of clusters of this corpus dataset, statements are restricted to the above structural dominance of embedding within ConEn2.

4.4 Discussion and conclusion

As stated at the beginning of this chapter, it has been the aim of this corpus analysis to capture the diversity of English *of*-NPs and to give a statistical account of the frequency of each individual type. Embedded within the theoretical account presented in Chapter 3, this approach has yielded nine main categories and 31 subcategories of *of*-NP constructions each with different associated meaning relationships between ConEn1 and ConEn2. Furthermore, this constructional approach to *of*-NPs has also made possible the inclusion of every single instance of the 2,037 *of*-NPs analysed. Both core and idiosyncratic examples of the phenomenon have been identified as belonging to one of the 31 *of*-NP constructions. In addition, these new insights have also been linked with previous literature indicating how the 31 subcategories of *of*-NPs fit in with research on *of*-NPs so far. In the following, these new insights, which have individually already been identified within certain *of*-NP categories above, shall be brought to light in more detail. First, Table 4-20 gives a summary of the frequencies of the *of*-NP constructions found in the dataset. Ignoring the more subtle categorisations in Subcategories AE, BB and CA, Table 4-20 only presents the 22 broader categories and subcategories.

Table 4-20: The frequencies of the 22 different *of*-NP constructions

Category	Subcategory and constructional meaning	Freq	%
Possession (36.6%)	AA: CONEN1 IS A FEATURE OF CONEN2	275	13.5
	AB: CONEN1 IS A MERONYMIC PART OF CONEN2	181	8.9
	AC: CONEN1 IS RELATED TO CONEN2	123	6.0
	AD: CONEN2 IS THE SOURCE OF CONEN1	110	5.4
	AE: CONEN2 POSSESSES CONEN1	57	2.8
Qualification (14.3%)	BA: CONEN2 CLASSIFIES CONEN1	111	5.4
	BB: CONEN2 QUALIFIES CONEN1	140	6.9
	BC: CONEN2 IDENTIFIES CONEN1	40	2.0
Quantification (10.5%)	CA: CONEN1 QUANTIFIES CONEN2	186	9.1
	CB: CONEN2 QUANTIFIES CONEN1	28	1.4
Engagement (13.8%)	DA: CONEN2 IS PASSIVELY ENGAGED IN CONEN1	245	12.0
	DB: CONEN2 IS ACTIVELY ENGAGED IN CONEN1	37	1.8
Selection (11.2%)	EA: CONEN3 IS A SUBSET OF CONEN2	122	6.0
	EB: CONEN3 IS A FRACTION OF CONEN2	106	5.2
Apposition (4.7%)	FA: CONEN2 IS CONEN1 INHERENTLY	52	2.6
	FB: CONEN2 IS CONEN1 NON-INHERENTLY	41	2.0
	FC: CONEN2 IS CONEN1 SUBJECTIVELY	2	0.1
Displacement (5.1%)	GA: CONEN3 IS A REPRESENTATION OF CONEN2	64	3.1
	GB: CONEN3 IS AN INSTANCE OF CONEN2	21	1.0
	GC: CONEN3 IS AN INDEX OF CONEN2	19	0.9
Typification (3.7%)	H: CONEN3 IS A TYPE OF CONEN2	75	3.7
Election (0.1%)	I: CONEN1 IS THE BEST WITHIN CONEN2	2	0.1
Total		2,037	100.0

The first—and most important—result of the above corpus analysis are the frequencies of each individual type of *of*-NP, which identifies the different categories as either core or idiosyncratic representatives of the overall phenomenon of *of*-NPs. Table 4-20 summarises the different subcategories from each main category and shows their frequencies in relation to one another. It illustrates that by far the most frequent main category of *of*-NPs is Category A which deals with the notion of possession. Indeed, the most frequent type of *of*-NP is part of this category, namely Subcategory AA where ConEn1 expresses a feature of ConEn2. This subcategory makes for 13.5% of the whole corpus dataset. The second most frequent type of *of*-NP is found with Subcategory DA, where ConEn2 is passively engaged in the event expressed in

ConEn1, which makes up for another 12% of the dataset. It is curious that, despite their high frequency, these two core representatives of *of*-NPs are not being discussed in the literature on a large scale but are only mentioned in passing (see for example Quirk et al. 1985: 322 on objective genitives). This can be related to these types of *of*-NPs being analysed “reasonably straightforwardly as containing a nominal head followed by a prepositional phrase” (Keizer 2007: 62). It is only the third most frequent type of *of*-NP—Subcategory CA where ConEn1 quantifies ConEn2—which is then represented in the literature more substantially (see for example Keizer 2007: chapter 6 on pseudo-partitives). In contrast, one of the most idiosyncratic types of *of*-NPs, Subcategory FC where ConEn2 is subjectively identified as ConEn1, has received a lot of attention in the literature (see Section 2.2.5), whereas more frequent categories have not.

In addition, this corpus study has unveiled new types of *of*-NPs which have so far remained unmentioned in the literature. The most striking of these is the idiosyncratic Category I, with the specific constructional meaning where ConEn1 is identified as the best of its kind within the time period of ConEn2. Another is Subcategory CB—ConEn2 quantifies ConEn1—which constitutes the quantificational opposite to the core type, CA. Hence, this corpus study has provided an insight into the overall variety of English *of*-NPs, further also indicating the frequency of each individual type of *of*-NP, which is thought to be representative of the overall phenomenon. Such a statistical statement has so far not been possible due to previous research’s focus on one type of *of*-NP only, or due to the absence of corpus-driven data.

In addition to identifying the frequencies of the individual subcategories in a representative dataset, this corpus study has also related different types of *of*-NPs to each other by grouping them together in the same main category. For example, as discussed in Section 4.3.2.6 above, Category F groups together three subcategories under the phenomenon of apposition, including the highly discussed Subcategory FC. While Quirk et al. (1985: 1284–1285) have identified the similarity between Subcategory FA and FC before, other research on Subcategory FC never relates these *of*-NPs to apposition as has been done by this corpus study. Furthermore, Subcategory FB has been identified as an altogether new category of *of*-NPs, which is located semantically between the two other types, thus creating a scale that ranges from absolute objectivity in Subcategory FA to subjectivity in Subcategory FC. Another

example of how different categories have been related with one another are Subcategories EA and EB, in both of which a smaller referent is selected from the wider referent that is ConEn2. The difference between the two lies in the compositionality of ConEn2. In Subcategory EA, ConEn2 refers to a group of individual components a specific number of which can then be selected by means of ConEn1. In Subcategory EB, on the other hand, ConEn2 refers to one whole entity, which results in ConEn1 selecting a fraction rather than a subset.

Another aspect of the various *of*-NP categories that has been uncovered is category internal rather than relating to links between categories. Category H, which contains the previously discussed SKT expressions, shows that previous literature, although extensive, has not covered the whole nature of this particular type of *of*-NPs. So far, research on this category has only focused on ConEn1s containing the nouns *sort*, *kind* and *type*, whereas this corpus study has shown that there is a multitude of other nouns that also fulfil the function of typicity between ConEn1 and ConEn2 (see Section 4.3.2.8), although, unlike SKT *of*-NPs (see Brems & Davidse 2010), these additional nouns do not show signs of grammaticalisation. Hence, this corpus study has also identified *of*-NPs previously discussed in other research as being part of a larger category of *of*-NPs.

This illustrates that this current study, although not focusing on the notion of headedness, incorporates findings of previous research. The types of *of*-NPs discussed by other scholars are represented within the list of categories of this corpus study, too, but they are incorporated in a wider study, relating them to other types of *of*-NPs both statistically as well as semantically. Indeed, this corpus study has shown that the theoretical framework as outlined in Chapter 3, which categorises *of*-NPs based on the constructional meaning relationship between ConEn1 and ConEn2, has allowed for every type of *of*-NP to be accounted for. Indeed, it incorporates core as well as idiosyncratic types of *of*-NPs and even allows for individual idiosyncratic expressions within a category of *of*-NPs to be analysed.

This result goes against other scholars' claim that, for reasons of simplicity and uniformity, only core examples of a grammatical phenomenon should be included in grammatical research (see Section 1.2.1). Indeed, as opposed to the difficulties encountered with idiosyncratic *of*-NPs in headedness-driven accounts, the semantically oriented framework presented here has successfully categorised every *of*-NP encountered within the corpus dataset. In addition, while *of*-NPs have previously

been categorised on the basis of structural, head-oriented criteria (see for example Keizer 2007) or semantic criteria of the first nominal (see Francis et al. 1998), this study has provided the first categorisation of *of*-NPs based on their constructional meaning between ConEn1 and ConEn2.

Finally, in order to gain an even deeper understanding of each category, more research would be necessary, focusing on each corpus category individually. Specifically, for example, idiosyncratic *of*-NPs—such as Subcategory FC and Category I—would need further corpus research, examining a higher number of instances of *of*-NPs in order to find out more about their behaviour (e.g. whether they have a different distribution in spoken data). Further research is also needed on the phenomenon of *of*-NP clusters, which have been discussed only briefly in Section 4.3.3, as well as on the occurrence of *of*-NPs in spoken data and across different text genres (see for example Biber & Clark 2002).

Most importantly, however, this study—as well as other accounts of this phenomenon—has so far only explored English *of*-NPs out of context, another gap in the research on this phenomenon identified in Section 1.2.2. While dealing with the issue of idiosyncrasy as well as accounting for the phenomenon's variety, the corpus methodology presented in this Chapter has so far neglected the expressions' immediate textual environment. Thus, this aspect of the phenomenon's nature is looked at in the following chapter. Specifically, Chapter 5 examines how the different corpus categories identified in Chapter 4 are embedded within their textual environment and whether they portray different kinds of cotextual functions.

5 The textual functions of *of*-NPs: A cohesion analysis

In the previous chapter, nine different main categories of *of*-NP constructions with 31 subcategories were identified and discussed as found within the corpus dataset of 2,037 *of*-NPs. It was shown that each of these 31 subcategories is characterised by its own constructional meaning relationship between the two conceptual entities, ConEn1 and ConEn2. As outlined in Chapter 3, the lexical meanings of ConEn1 and ConEn2 in combination with the constructional meaning relationship of one of the 31 categories then makes up the overall meaning of ConEn3, the *of*-NP as a whole. Furthermore, the corpus analysis in Chapter 4 also identified the different frequencies of all 31 subcategories of *of*-NPs and related them to one another by grouping them into nine main categories. As a result, it captured the nature of *of*-NPs in its full diversity, including core as well as idiosyncratic examples of *of*-NP constructions. Thus, it has contributed towards the main aim of this study to capture the multifaceted nature of English *of*-NPs.

As stated in Chapter 1, Section 1.2, however, the diversity of English *of*-NPs and the frequency of their different categories is only one facet of their complex nature. Specifically, Section 1.2.2 addressed the need to also consider the phenomenon in its context, in order to understand its behaviour and function in discourse. In previous literature, the context of *of*-NPs has only been considered in order to identify the head of individual examples in terms of verbal agreement (see for example Keizer 2007: 120), without further examining the expression's textual function(s) and the way they are embedded in context. This is akin to only viewing the tip of an iceberg without analysing the masses of ice hidden below the surface. Therefore, in order to fill this gap in research, this current chapter provides an analysis of how English *of*-NPs are embedded in their cotext⁷⁶ and presents their textual function(s), thereby adding a further aspect to the analysis of this phenomenon's multifaceted nature.

In the extended data cycle presented in Section 1.4.2, this cotextual analysis constitutes Step 5. It is located after the corpus approach, and has, for orientational purposes, been marked in red in Figure 5-1 below. In addition, this approach also signifies a step away from isolated data to data embedded within its cotext.

⁷⁶ For the difference between 'context' and 'cotext', see Section 5.1 below.

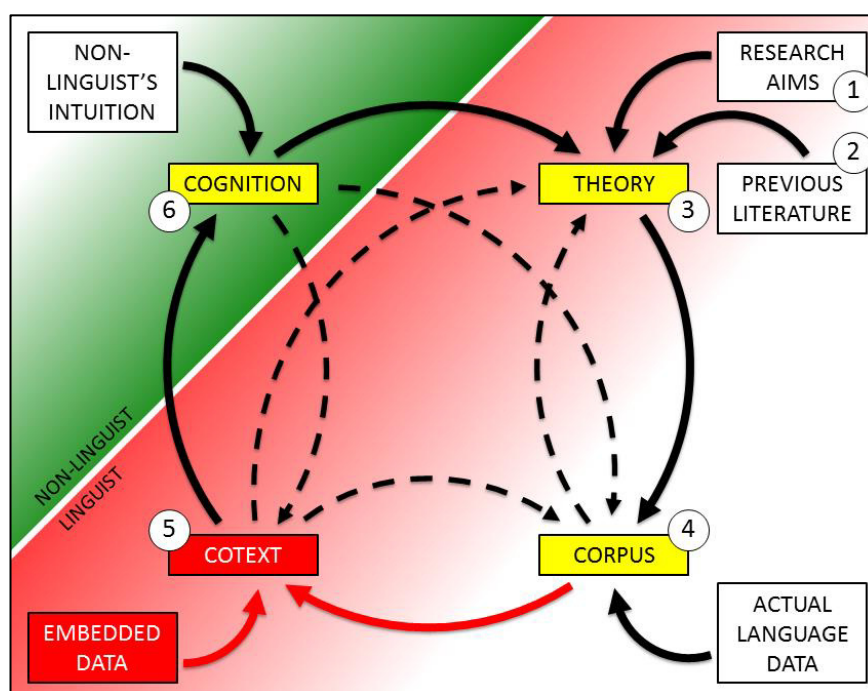


Figure 5-1: The transition from corpus to cotext in the extended data cycle

Furthermore, the cotextual analysis of *of*-NPs is also brought into relation with the results of the corpus analysis. Specifically, this chapter examines whether the 31 different *of*-NP constructions behave differently within their respective cotexts, i.e. whether they are embedded differently within their cotext and whether they fulfil different functions. What is more, it presents an analysis of how the constructional meaning of an *of*-NP, i.e. the meaning relationship between ConEn1 and ConEn2, is logically embedded within an expression's cotext as well. Hence, in line with the main research aim of this study, this chapter aims to show how the separate facets of English *of*-NPs so far examined—their diversity, their constructional meaning, and their behaviour in context—are interlinked with one another, which gives further insight into the multifaceted nature of this grammatical phenomenon.

In sum, the specific aims of this current chapter are thus threefold: (i) it investigates whether the 31 different categories of *of*-NP constructions established in Section 4.3.2 feature different textual functions; (ii) it examines whether the constructional meaning that is part of the blend within *of*-NPs can be traced cohesively within the expressions' cotext as well; (iii) first and foremost, however, the analysis provides a general view on how *of*-NPs are embedded within their cotextual environment. Specifically, it examines the cumulative effect of all the cohesive ties

each *of*-NP is involved in,⁷⁷ to then identify the textual functions that can be assigned to the phenomenon.

In the following, Section 5.1 first discusses the means by which any linguistic unit is embedded within a context, and it establishes the difference between a unit's context and its cotext. Subsequently, Section 5.2, mainly focusing on Halliday & Hasan's (1976, 1989) work on cohesion, introduces six cohesive layers which make up the cotextual environment of *of*-NPs (see Figure 5-2). Starting with the lowest layer of cohesive ties, working its way upwards through layer after layer, Section 5.2 then establishes the two novel concepts of 'cohesive footprint' and 'cohesive landscape', which are both central to the present cotextual analysis of *of*-NPs. The methodology for this cotextual approach, including the gathering of the *of*-NPs' cotext from the BNC and the way the textual analysis was then carried out, are presented in Section 5.3. Subsequently, the results of this analysis are discussed in Sections 5.4 and 5.5. Section 5.4 presents the five different textual functions of *of*-NPs that have been found, i.e. elaboration, linking, transition, introduction, and mention. Section 5.5, then, discusses the correlation between individual categories of *of*-NP constructions as well as the interaction between specific *of*-NPs' cotext and their constructional meaning. Section 5.6, finally, offers a discussion and conclusion to the cotextual approach, presenting a link to the last quarter of the extended data cycle, i.e. the cognitive approach.

5.1 A definition of context and cotext

Any linguistic unit written or spoken, including *of*-NPs, is always embedded within a context, or, as Halliday & Hasan (1989: 5) put it: "The situation is prior to the discourse that relates to it". The term 'context' and related concepts have, however, been used in varying ways in the past. Therefore, it is worthwhile to briefly discuss the different elements of a linguistic unit's context and define the terminology as it is used within this study, namely the terms 'context', 'cotext', 'situation', 'cultural background' and 'universe of discourse'.

Halliday & Hasan (1989: 6) point out that, originally, the term 'context' was used to refer to the immediate linguistic environment, written or spoken, that surrounds a given linguistic unit. However, with the works of anthropologist Bronislaw Malinowski (1923, 1935), the notion of context was broadened to include more than

⁷⁷ See Section 5.2.1 below for a definition of the term 'cohesive tie'.

just the immediate linguistic environment. He introduced the notions of ‘context of situation’ and ‘context of culture’. The former refers to the situation within which the linguistic unit is being produced, or “the environment of the text” in Halliday & Hasan’s (1989: 6) terms. For example, looking at the ‘context of situation’ would take into account if something is being said formally in front of a jury at court, or whether it is being shouted at a friend over loud music in a club. The latter, on the other hand, contains “information [...] about the total cultural background” (Halliday & Hasan 1989: 6), i.e. things that we know to be true based on our ‘cultural knowledge’. Following this, Halliday & Hasan (1989: 75–76) then state that “any linguistic unit from a text [...] has two environments: (1) the extra-linguistic environment—the context—relevant to the total text; and (2) the linguistic environment—the co-text—the language accompanying the linguistic unit under focus”. Hence, by this definition, the term ‘context’ would refer to anything that is not part of the text, whereas the term ‘cotext’ is used to refer to the linguistic environment and thus to the original pre-Malinowskian meaning of ‘context’. Note that this also implies that the cotext, i.e. the linguistic environment, is not considered to be part of the context.

This study uses these terms slightly differently. In the following, ‘context’ is used as an umbrella term to cover everything that a linguistic unit is embedded in. The context of an utterance therefore consists of the three elements that have been mentioned so far: the ‘cotext’ (i.e. the linguistic environment), the ‘situation’ (i.e. the context of situation), and the ‘cultural background’ (i.e. the context of culture). Furthermore, I refer to the cotext preceding an *of*-NP as ‘pre-cotext’ and to the one following the expression as ‘post-cotext’. In addition, while much of the precise interpretation of an *of*-NP relies on the interactants’ shared cultural knowledge, I would like to add the notion of ‘universe of discourse’. This is defined by Hurford, Heasley & Smith (2007: 62) as “the particular world, real or imaginary (or part real, part imaginary), that the speaker assumes he is talking about at the time”.

In the following, the textual analysis conducted for a set of *of*-NPs from the corpus dataset is based on their cotext as this is the part of their context which can be retrieved from the BNC through Sketch Engine (see Section 5.3.1). Before looking at the methodology and results of the cotextual analysis in more detail, however, Section 5.2 outlines the different layers of cohesion that construct the cotext of *of*-NPs.

5.2 The six cohesive layers of an *of*-NP's cotext

This study analyses the cotext of *of*-NPs by the means of six cohesive layers. As is illustrated in Figure 5-2 below,⁷⁸ the smallest cohesive unit of a text, i.e. cohesive ties, make up the lowest layer. Moving from one cohesive layer to the next, they get more and more complex. As will be shown, the first four layers of 'cohesive ties', 'cohesive devices', 'cohesive relations' and 'cohesive chains' are all associated with Halliday and Hasan's (1976, 1989) seminal work on cohesion. The top two layers, however, are novel concepts that have been coined for the purposes of this cotextual analysis. As will become clear below, the fifth layer consists of three 'cohesive footprints'. These refer to the sum of cohesive ties of each conceptual entity of an *of*-NP. Finally, in the sixth layer, the term 'cohesive landscape' is used to refer to the collective sum of these three cohesive footprints, i.e. an *of*-NP's total sum of cohesive ties in all its complexity.

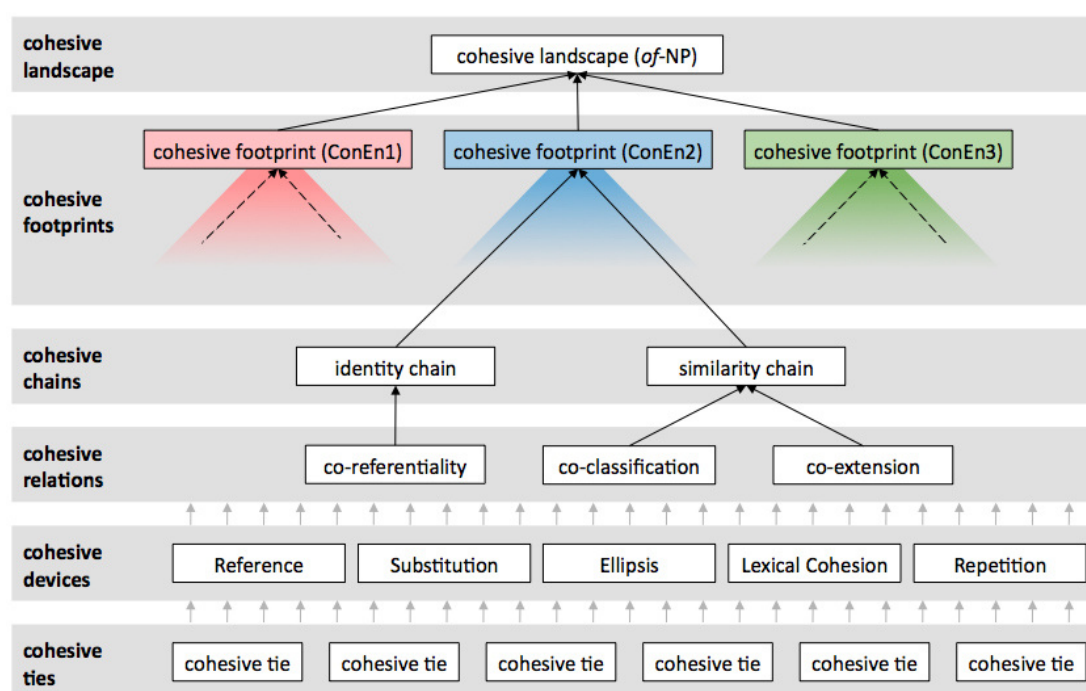


Figure 5-2: The cotextual environment of English *of*-NPs

In the following, I present how these six individual cohesive layers are linked with one another, starting with the smallest. Hence, Section 5.2.1 discusses the first three layers of cohesive ties, cohesive devices and cohesive relations. It illustrates how the three layers relate to one another, but then mainly focuses on the three cohesive relations of

⁷⁸ The colour scheme of red, blue and green for ConEn1, ConEn2 and ConEn3, as displayed in Figure 5-2, becomes relevant in the cotextual analysis in Section 5.3.2 below.

‘co-referentiality’, ‘co-classification’, and ‘co-extension’. Section 5.2.2, then, shows how these cohesive relations amount to a higher layer of cohesive chains. Finally, in Section 5.2.3, the novel terms ‘cohesive footprint’ and ‘cohesive landscape’ are introduced in more detail. In these two cohesive layers, the other layers are linked with the three conceptual entities of *of*-NPs. Furthermore, it is these two layers, and the relationship between them, which are the focus of the cotextual analysis as presented in Section 5.3.2.

5.2.1 Cohesive ties, devices and relations

The smallest cohesive unit by which linguistic expressions, such as *of*-NPs, can be embedded within their discourse are cohesive ties. Halliday & Hasan (1976: 4, emphases in original) define cohesion as follows:

Cohesion occurs where the INTERPRETATION of some element in the discourse is dependent on that of another. The one PRESUPPOSES the other, in the sense that it cannot be effectively decoded except by recourse to it. When this happens, a relation of cohesion is set up.

A cohesive tie, then, is defined as “a single instance of cohesion, [...] one occurrence of a pair of cohesively related items” (Halliday & Hasan 1976: 3). However, while the study at hand adopts the same definition of a cohesive tie, it uses a slightly different definition of cohesion. Halliday and Hasan’s notion of presupposition, that the meaning of one element of the tie can only be decoded by the means of the other, is here not regarded as a defining feature of cohesion. While it is certainly true that some elements, such as pronouns (see Section 5.2.1.2 on Substitution below), borrow their semantic content from another entity, this is not necessarily the case for every type of cohesive tie (see Section 5.2.1.3 on Lexical Cohesion and Repetition). Hence, a cohesive tie exists between two linguistic units that are semantically related, either because one presupposes the other, or due to there being a sense relation between the two.

Moving from the first cohesive layer in Figure 5-2 above to the second, a cohesive tie is always of a particular kind. In other words, there are five different types of cohesive ties, namely ‘Reference’,⁷⁹ ‘Substitution’, ‘Ellipsis’, ‘Lexical Cohesion’

⁷⁹ The term ‘Reference’, in Halliday & Hasan (1976), is used differently from other linguists. Traditionally, ‘reference’ is defined as the “relationship between language and the world” (Hurford et al. 2007: 26), i.e. the phenomenon of linguistic units being used to refer to real world entities, and

and ‘Repetition’.⁸⁰ These types of cohesive ties are also called ‘cohesive devices’, and have all been discussed in Halliday & Hasan (1976). In a further step, in the third cohesive layer in Figure 5-2, each occurrence of a cohesive device is always an instance of one of three cohesive relations: co-referentiality, co-classification, or co-extension (see Halliday & Hasan 1989: 73–74). These three cohesive meaning relations can be realised by different cohesive devices. Some of these devices are, however, more typical for one of the three cohesive relations (see Halliday & Hasan 1989: 74). Thus, in Sections 5.2.1.1 to 5.2.1.3 on the three cohesive relations, the cohesive devices that are typically associated with one of the cohesive relations are each introduced alongside. Moreover, the three cohesive relations can all occur with the phenomenon of *of*-NPs (although, it is the third, co-extension, which contributes most to the embedding of *of*-NPs within their cotext). Thus, in the following, the examples used in order to illustrate the relations and their typical cohesive devices are each of an *of*-NP within its cotext taken from the cotextual dataset (Appendix B), which is introduced in more detail in Section 5.3 and which has been used for the subsequent analysis in Sections 5.4 and 5.5.

5.2.1.1 Co-referentiality

The concept of co-referentiality refers to the phenomenon that occurs when two linguistic units are identical in reference (see Halliday & Hasan 1989: 73). In other words, both linguistic units are referring to the same individual entity. As stated by Halliday & Hasan (1989: 74), this relation “is typically realised by the devices of [R]eference, such as pronominals ‘he’, ‘she’, ‘it’, etc. or by the use of the definite article ‘the’ or that of the demonstratives ‘this’ or ‘that’”. These elements, “instead of being interpreted semantically in their own right, [...] make reference to something else for their interpretation” (Halliday & Hasan 1976: 31). An example of co-

abstract and fictitious concepts. In Halliday & Hasan (1976), on the other hand, ‘Reference’ is a cohesive device which occurs when two linguistic units refer to the same real world entity (i.e., rather confusedly, when two linguistic units are identical in reference), but the semantic content of one of the two linguistic units is only decodable by reference to the other (e.g. pronouns). In order to keep these two concepts apart, the traditional use of the term is spelled in small case letters throughout this study, while Halliday and Hasan’s use of the term is written with a capital ‘R’.

⁸⁰ Halliday & Hasan (1976: 226–273) also discuss a sixth type of cohesive device called ‘Conjunction’. This device has, however, been excluded here, because it does not occur with *of*-NPs and is thus not relevant here.

referentiality within English *of*-NPs is given in example (5-1) taken from the cotextual dataset. Both elements of the cohesive tie are underlined; the *of*-NP is given in italics:⁸¹

- (5-1) the Arias peace plan [...] was hindered by Costa Rica's failure to ratify the treaty of adherence on the grounds that it would compromise the country's sovereignty. <95/c>

In this example, the semantic content of the pronoun *it* can only be understood by anaphoric reference to the *of*-NP *the treaty of adherence*. In other words, this is an example where ConEn3 is embedded within its cotext by the means of Reference. A further example where only a part of the *of*-NP is embedded by co-referentiality is given in example (5-2):

- (5-2) But while most of Merseyside is invited along, there is one notable exception. Her mum, former Knowsley mayor Mrs Frances Clarke, is barred. 'I'm leaving *a picture of my mother* up at the front door with a notice saying this woman is not allowed into the theatre', says Margi. 'She's already doing a novena for me because of the Good Sex Guide she'll be praying forever when she sees this show. <613/c>

In this example, it is ConEn2, *my mother*, which is embedded in the *of*-NP's cotext by the means of co-referentiality. All the expressions given in italics—*one notable exception*, *her mum*, *former Knowsley mayor Mrs Frances Clarke*, *my mother*, *this woman*, and the three occurrences of *she*—refer to the same entity, i.e. the mother of comedian Margi Clarke. In addition, this co-referentiality is achieved by the means of two different types of cohesive device. Next to Reference, which is realised by the triple use of the pronominal *she*, the possessive determiners *her* and *my*, and the demonstrative determiner *this*, Lexical Cohesion is here also used to add to the co-referentiality. The expressions *mother* and *woman*, for example, both belong to the same semantic field. With a *mother* being a type of *woman*, they are in a hyponymic relationship, but here they are also used to refer to the same person and are thus part of co-referentiality too. The workings of Lexical Cohesion will, however, be discussed in more detail in Section 5.2.1.3 on co-extension below. First, though, Section 5.2.1.2

⁸¹ In accordance with the corpus data, the following examples are all marked with their corresponding concordance line number in chevrons < >. In addition, they are followed by a forward slash / and a small case letter 'c' which indicates that the respective *of*-NP is also part of the cotextual dataset (Appendix B).

takes a brief look at the cohesive relation of co-classification, which is rather rare in *of*-NPs but shall be mentioned here for the sake of completeness.

5.2.1.2 Co-classification

In opposition to co-referentiality, where the two members of a cohesive tie share the same referent, i.e. refer to one and the same entity, the relation of co-classification involves two linguistic units which “belong to an identical class, but each end of the cohesive tie refers to a distinct member of this class” (Halliday & Hasan 1989: 74). This can be illustrated with example (5-3) adopted from Halliday & Hasan (1989: 74):

- (5-3) —‘Can I borrow your pen?’
—‘Yes, but what happened to yours?’

In this example, both *your pen* and *yours* refer to the same type of entity, namely a ‘pen’, but the identity of reference is not the same. The two expressions refer to two distinct pens. Halliday & Hasan (1989: 74) state that co-classification is most commonly realised by Substitution or Ellipsis. The dialogue in (5-3), for instance, is an example of Ellipsis, where *pen* has been ellipped from the noun phrase *yours*. However, based on the cotextual analysis outlined below, Substitution and Ellipsis—and thus co-classification—are very rarely involved in the embedding of *of*-NPs within their cotext. Within the cotexts of 199 *of*-NPs analysed for this study (see Section 5.3 below), not a single relation of co-classification could be found. Theoretically, however, it would be possible for co-classification to occur with *of*-NPs. Thus, for the purposes of illustration, consider the three invented utterances in (5-4) to (5-6), within which ConEn1, ConEn2 and ConEn3 respectively are involved in a cohesive tie of co-classification. All three examples are to be imagined in a situation where the speaker is showing photos or objects to the listener, explaining what they are. The *of*-NPs are all given in italics, while the two elements of the tie are underlined:

- (5-4) ‘Look, this is a picture *of my mother*. – Oh, and here’s one of my father’.
(5-5) ‘Look, this is *a picture of* a train. – Oh, and here’s a model of one’.
(5-6) ‘Look, this is a picture of my mother. – Oh, and here’s another one’.

These three utterances are all examples of co-classification by Substitution, where the pronominal *one* substitutes the entities *a picture* (ConEn1), *a train* (ConEn2) or *a picture of my mother* (ConEn3) respectively. In each case, *one* and its counterpart do

not refer to exactly the same entity, but rather to a member of the same class of entities. For example, in (5-4) the two entities both refer to a photo, but to two different ones. One of them is a photo of the speaker's mother, while the other depicts their father.

5.2.1.3 *Co-extension*

Finally, the most important cohesive relation for *of*-NPs is that of co-extension, as it is the most frequent of the three. While the two elements of a cohesive tie are identical in reference in co-referentiality, and refer to members of the same class in co-classification, in co-extension the two items are even further removed from one another. Halliday & Hasan (1989: 74) define co-extension as a cohesive tie where both elements "refer to something within the same general field of meaning". Hence, this cohesive relation is created through sense relations between linguistic entities. The sense relations mentioned by Halliday & Hasan (1989: 80) are synonymy, antonymy, hyponymy and meronymy, and they also include the repetition of a lexical item as a co-extensional tie. In addition, Jones (2014: 231) also includes metonymy in this list of possible co-extensional ties.

These sense relations are commonly understood to exist between lexical items. Jackson & Zé Amvela (2007: 106), for example, state that "[s]ense relations hold between words within the vocabulary", and Halliday & Hasan (1989: 80) state that co-extensional elements "are typically linguistic units that we refer to as 'content words' or 'lexical items'". This definition is, however, not satisfactory since it is unclear what Halliday and Hasan mean by 'lexical item'. Jones (2014: 237n244) assumes that they mean "lexical units made up of a small number of words" which, for example, would also include compound words. However, Jones (2014: 238) points out that "textual cohesion [can be] created by units larger than content words or lexical items". She calls these larger items 'propositions'. The inclusion of larger elements in co-extension is supported by Halliday & Matthiessen (2014: 606, emphasis in original) who also include more complex items such as "*maintaining an express locomotive at full steam*". Moreover, Hurford et al. (2007: 106) also mention the possibility of sense relations between larger units such as sentences. As will become clear in the examples below, the inclusion of such larger units is essential for the cotextual analysis of *of*-NPs. Therefore, Jones' (2014) term 'proposition' is adopted here. Likewise, following Jones (2014: 239), the type of sense relation between the items in a tie are not identified within the cotextual analysis, for reasons of complexity. While it is sometimes quite

easy to identify a sense relation between two propositions, as in example (5-7), the larger units can also render the analysis rather complicated, as becomes apparent in example (5-8):

- (5-7) The rest of Los Angeles moved only in the safety of cars, and the streets had become sterile and unwelcome. <961/c>
- (5-8) The ruggedly handsome Clinton took 60 per cent of the female vote in his presidential victory, proof above anything else of his sexual chemistry. He flirts, he touches, he gazes deep into the eyes of the person he is talking to, no one is immune to his immense charm. One of the phenomena of his campaign was the presence of large groups of women who would [sic!] scream and faint whenever he came anywhere near them. ‘When he talks to you he makes you feel as if you are the only person in the entire world’, said one woman who met him on the campaign trail. ‘He just gives out this incredible air of sexuality. He is unbelievably charismatic. <6/c>

In example (5-7), the two propositions of the tie are in an antonymic relationship. The danger lurking in the sterile and unwelcome streets of Los Angeles is in direct contrast with the safety of cars. Thus, in this example it is fairly straightforward to identify a sense relation of antonymy. In contrast, the underlined elements in example (5-8) cannot be directly allocated to one of the sense relations above, as they are not in a straightforward synonymic, antonymic, hyponymic or meronymic relation. Instead, the underlined propositions are all ‘instantiations’ of the same superordinate proposition ‘Bill Clinton’s sex appeal’. Hence, because the identification of sense relations between the individual items of a tie can be difficult, it is not attempted as part of this study. Instead, co-extension, as well as co-referentiality and co-classification, form part of a much broader analysis of the cotext of *of*-NPs, by looking at the interaction between the different cohesive footprints involved. Before I explain this interaction in Section 5.2.3, however, Section 5.2.2 discusses the notion of ‘cohesive chains’ by introducing Halliday and Hasan’s (1989) ‘identity chain’ and ‘similarity chain’.

5.2.2 Cohesive chains

So far, this chapter has introduced the notion of cohesive ties between two linguistic units. In addition, we looked at three different cohesive relations between the two

elements of a cohesive tie, namely co-referentiality, co-classification and co-extension. This section moves from looking at one single item to whole strings of related cohesive ties. Such a string of cohesive ties is called a ‘cohesive chain’. According to Halliday & Hasan (1989: 84), there are two different types of cohesive chains (also see Figure 5-2 above). The first type, called ‘identity chains’, consists of items that are related co-referentially. In other words, identity chains are made up of linguistic units that all refer to the same entity. Example (5-2) above contains one such example of an identity chain, where the eight items *one notable exception*, *her mum*, *former Knowsley mayor Mrs Frances Clarke*, *my mother*, *this woman*, *she*, *she*, and *she* all refer to the same entity (namely Margi Clarke’s mother). Thus, these eight items form an identity chain through co-referentiality. In contrast, the second type of cohesive chain, called ‘similarity chain’, is made up of ties of co-classification and co-extension. A similarity chain consists of linguistic units that refer to related entities, either from the same class of entity (co-classification) or from a related semantic field (co-extension). In example (5-8) above, the underlined items are all part of a co-extensional similarity chain about President Clinton’s sex appeal. The individual items of the chain do not all refer to the same entity. Rather, they are all non-identical instantiations or features of the same phenomenon.

Hence, cohesive ties are always part of whole cohesive chains: identity chains or similarity chains. A cohesive chain thus has to consist of at least one cohesive tie, i.e. at least two linguistic units, whereas there is no maximum to its length. Finally, such chains can also occur with individual elements of *of*-NPs. In the following, Section 5.2.3 thus presents how cohesive chains interact with *of*-NPs, which leads us to the notions of, what I call, the ‘cohesive footprint’ of the individual ConEns and the ‘cohesive landscape’ of the *of*-NP as a whole.

5.2.3 Cohesive footprints and the cohesive landscape

We have so far seen the different types of cohesive relations that can exist between the items of a cohesive tie, and how these relations can build whole cohesive chains. Furthermore, Section 5.2.2 has illustrated the two different types of cohesive chains, namely identity chains and similarity chains. The current section now provides a link between cohesive chains and the individual elements of an *of*-NP. Its aim is to define which aspect of an *of*-NP’s cohesive environment is focused on in the cotextual

analysis. Specifically, for this purpose, this section introduces the notions of ‘cohesive footprint’ and ‘cohesive landscape’.

As introduced in Section 5.2.2, the three conceptual entities of *of*-NPs can be part of both identity chains and similarity chains. For example, as seen in (5-6) above, ConEn3 can be referred back to as a whole by pronominals, and the individual entities ConEn1 and ConEn2 can also be part of cohesive chains as is illustrated by examples (5-2), (5-4), (5-5) and (5-7) above. However, quite frequently, the three conceptual entities are part of more than one chain, when they are embedded in the cotext by identity and similarity chains simultaneously. An example of this is given by the extract (5-9) taken from concordance line <386/c>⁸².

- (5-9) ‘Ada Williams is my grandmother’. He looked stunned. ‘I don’t believe it’, Lucenzo muttered in an ominously quiet voice’. [...] He knew all about the **blackmail**. [...] ‘You – realise I’m here because of the – the **blackmail**?’ she croaked, barely managing to say the word. [...] ‘Are you suggesting that I’ve come to –?’ ‘Continue the **extortion** your grandmother began?’ finished Lucenzo [...]. ‘You and Corosini are wrong all down the line. About Gran, about me, and even my sex’. [...] ‘And, for your information, I’ve long wished that I’d never heard of you – or your wretched grandmother [...]’ [...] ‘You think I’m *the granddaughter of a criminal* [...] You’re wrong. **I’ve always been totally honest**’, she cried shakily. ‘My parents brought me up to –’ ‘**Lie, cheat, steal**. [...]’ <386/c>

In this extract, which originates from the novel *Mask of Deception* by Sara Wood (1993), ConEn2, *a criminal*, is part of both an identity chain as well as a similarity chain. The *of*-NP analysed here, i.e. *the granddaughter of a criminal*, is given in italics. All elements that are part of ConEn2’s identity chain have been underlined, while all elements of the similarity chain have been highlighted in bold letters. In more detail, the six elements *Ada Williams*, *my grandmother*, *your grandmother*, *Gran*, *your wretched grandmother* and *a criminal* all form an identity chain referring to main character Meredith William’s grandmother. Simultaneously, ConEn2, *a criminal*, is also part of a similarity chain. This chain consists of seven elements—*blackmail*,

⁸² Note that the analysis of this particular *of*-NP required a total of 1,500 tagged elements in the pre-cotext as opposed to the standard 500 elements as described in Section 5.3.1 below.

blackmail, extortion, wretched, a criminal, I've always been totally honest and Lie, cheat, steal—which are all related to the superordinate proposition of ‘criminal activity’ either by the same semantic field, or by an antonymous relationship (as with *I've always been totally honest*).

It is thus apparent that the same conceptual entity can be part of different cohesive chains at the same time. Also note, that while the element *your grandmother* in the *of*-NP's pre-cotext forms part of an identity chain with ConEn2, it is also part of a similarity chain with ConEn1—namely by its relation to *the granddaughter*. Hence, the different cohesive chains of the three conceptual entities can be intertwined with one another in a complex fashion, and sometimes, due to the numerous different types of cohesive ties, be almost unmanageable.

Therefore, in order to enable the cotextual analysis of *of*-NPs, I group together all the cohesive chains—identity chains and similarity chains—of one conceptual entity into one cumulative ‘cohesive footprint’. Thus, *of*-NPs are always embedded within their cotext by the means of three cohesive footprints: one for each of the conceptual entities ConEn1, ConEn2 and ConEn3. Finally, the total of these three cohesive footprints and how they interact with one another in an *of*-NP's cotext is called an *of*-NP's ‘cohesive landscape’. Exploring an *of*-NP's cohesive landscape as a whole by looking at the interaction between its three cohesive footprints makes visible the expression's textual functions, as is illustrated in the cotextual analysis in Section 5.4.

5.3 Methodology of the cotextual approach

This section presents the methodology used for the cotextual analysis of *of*-NPs. Section 5.3.1 first establishes the means by which the *of*-NPs were chosen to be included in the cotextual dataset and explains how their respective cotexts were extracted from the BNC. By the means of a sample analysis, Section 5.3.2 then illustrates how the analysis of each *of*-NP cotext was undertaken, and how the interaction between the three cohesive footprints was captured with so-called cotextual icons, developed for the purpose of this analysis.

5.3.1 Gathering the cotextual data

As specified in Section 4.3.1, 2,037 valid written instances of *of*-NPs have been manually categorised within the corpus approach. As a result, nine different categories

with a total of 31 subcategories of *of*-NPs have been identified. It is these nine main categories A to I and their corresponding 31 subcategories, which form the basis for the cotextual data gathering for the current chapter.

In order to be able to make a claim about the potentially different nature of the cotextual landscape of each of these categories, all 31 of them needed to be represented to an equal degree within the cotextual dataset. The dataset was thus not to be representative of the frequency of the different types of *of*-NPs—these frequencies can be found within the corpus dataset instead—but was rather to include a representative number of each category, in order to study the occurrence of patterns in their cotextual landscape. Therefore, in order to gather a representative sample of the different *of*-NP constructions, seven instances were chosen from each category at random. In the cases of some smaller categories, which did not actually contain a total of seven instances, all instances were included in the dataset. As a result, the cotextual dataset amounts to 199 instances of *of*-NPs. Thus, just under 10% of the total of 2,037 *of*-NPs in the corpus dataset were incorporated in the cotextual dataset.

After selecting the *of*-NPs for the cotextual analysis, their cotext had to be extracted from the BNC. This was achieved by re-entering the expressions into Sketch Engine. Sketch Engine provides up to 100 tagged elements—this includes words, clitics, and punctuation marks—of cotext to either side of the search item. It was, however, decided that 100 tagged elements were not enough cotext in order to make a claim about the expressions' cotextual landscape. While the cotextual landscape of some of the *of*-NPs might well be fully incorporated within this short range of cotext, some might span across a much larger cotext. Therefore, I chose to gather roughly 500 tagged elements of cotext to either side of the *of*-NPs. This also ensured that in text types that consisted of a lot of punctuation marks, such as novels containing a lot of dialogue, the expression's cotext included enough semantic content.

Since Sketch Engine only provides us with 100 tagged elements to either side of the search item, the rest of the cotext had to be extracted using the following technique. The first few elements of the 100 elements to the left of the expressions, and the last few elements of the 100 elements to the right, were copied and re-entered into the search engine in order to extract a further 100 elements to the left and right respectively. This process was repeated until each expression was surrounded by roughly 1,000 elements of cotext, or until I reached the beginning or end of the BNC text file (marked by <bncdoc> and </bncdoc> respectively). Each of the 199 instances

of *of*-NPs and their extracted cotext was then copied into individual Word files, including information about the respective text i.e. the year of publication and the text type, which was added in a table at the end of each file. Finally, all 199 files were printed off in order to conduct the cotextual analysis. Later, these analysed files were then converted into digital format again and can be found in Appendix B. Each file is labelled with its respective concordance line number and its *of*-NP category code.

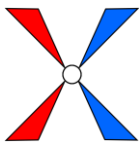
5.3.2 Cotextual analysis

Once collated, the 199 cotexts were analysed one by one, searching them for all cohesive ties involved in the cohesive footprints of ConEn1, ConEn2 and ConEn3 in the respective *of*-NP's pre- and post-cotext. In order to distinguish the cohesive footprints of the three conceptual entities from one another, all elements of each footprint have been marked with a different colour: elements belonging to the cohesive footprint of ConEn1 have been marked in red, elements of ConEn2 in blue, and elements of ConEn3 in green. These colours have already been used in Figure 5-2 on page 133 above, and will, for reasons of consistency, also be used in any further diagrams and figures which make reference to the cohesive footprints of the three conceptual entities. For illustration purposes of this mark-up, see the sample analysis of the cotext of the *of*-NP *cases of domestic violence* given in Table 5-1 in Section 5.3.2.1 below.

5.3.2.1 Detailed analysis of an *of*-NP cotext

In addition to being an exemplar of the mark-up used for analysis as described above, the sample cotext in Table 5-1 below presents one detailed analysis of the interaction between the footprints of the three conceptual entities and introduces the notion of the textual function of *of*-NPs. Note that some passages which did not contain any cohesive ties have been omitted by the ellipsis symbol [...] in order to keep this example as short as possible. Furthermore, as is the case in all other tables of cotextual analysis below, in Table 5-1 the *of*-NP of interest is separated from its cotext in its own cell in the middle of the table. Its pre-cotext and post-cotext have been added in the cells before and after. Moreover, in the column on the left, the source of the cotext is identifiable by its respective concordance line number from the corpus dataset. In addition, this same column also contains a so-called cotextual icon, the meaning and purpose of which are introduced in Section 5.3.2.2 below. A key for the mark-up for the footprints of ConEn1, ConEn2 and ConEn3 is also added in the leftward column.

Table 5-1: Cotextual analysis of ‘cases of domestic violence’ <26/c>

<26/c>	<p>[...] ‘It needs emphasizing that <u>crime</u> and fear of <u>crime</u> hit working class women more than any other major section of society. ‘In particular, these local surveys suggested that the fear that young women had concerning <u>sexual assault</u> was quite justified. Jones, et al. (1986) found that in Islington during the period covered there were about 1200 <u>cases</u> of <u>sexual assault</u>. Of these only <u>21 per cent</u> were reported to the police and only an estimated <u>9 per cent</u> were recorded in the criminal statistics. Young females are 18 times more likely to <u>be sexually assaulted</u> than those over 45. Class shows itself in the fact that women who are council tenants are three times more likely to <u>be sexually assaulted</u>, than those who are owner-occupiers. The 1982 and 1984 BCS between them only uncovered two cases of <u>attempted rape</u> and <u>17 and 18 sexual assaults</u> respectively (Jones et al. 1986, p.69). R. Hall (1985) suggested this under-reporting is perhaps partly because the BCS used some male interviewers. This was not supported by the results of the ICS, whose authors claim that their male interviewers actually uncovered more <u>cases</u> of <u>sexual assault</u> than did female interviewers. What was undoubtedly important, however, was that the ICS briefed and trained its interviewers to deal with the part of the questionnaire which dealt with <u>sexual offences</u>, and indeed when <u>a case</u> was uncovered by a male interviewer he always offered a follow-up interview conducted by a woman. These were usually declined (Jones et al. 1985, p.71). A survey by Living Magazine (14.8.89) which questioned 1,000 women, found that <u>one-third had received obscene phone calls</u> in the last year, <u>20 per cent</u> of this group more than once, yet only <u>26 per cent</u> had told the police, <u>13 per cent</u> <u>had been interfered with</u> and <u>87 per cent</u> of these kept silent; <u>9 per cent</u> had <u>suffered indecent exposure</u> and <u>92 per cent</u> failed to report this. Of the sample <u>49 per cent</u> felt that <u>being pestered by men</u> was inevitable. The rise in recorded <u>sexual offences</u> (Criminal Statistics 1988) is usually explained as an artefact of more sensitive and sophisticated police recording procedures and improved victim treatment, rather than a real underlying change, but hard evidence to support this is not clear. A major problem is still undoubtedly women’s negative attitudes towards the police stemming from their historically well-founded fears that the police do little in</p>
	<p>cases of domestic violence</p> <p>, and are unsympathetic to <u>sexual offences</u>. The local surveys have also emphasised the impact of <u>domestic violence</u> on women. As Walklate points out: incorporating an understanding of <u>domestic violence</u>, in particular, begins to alter somewhat the influence of gender as variable in the patterning of victimization as compared with BCS findings. (Walklate 1989, p.37) <u>Domestic violence</u> against women probably has <u>the greatest number</u> of unreported <u>offences</u>. In the United States the FBI believes it is probably ten times more underreported than <u>rape</u> (quoted in Smith 1989). The 1982 BCS found that <u>10 per cent</u> of <u>assault victims were women who has been attacked by present or previous husbands or boyfriends</u> (Hough and Mayhew 1983). The 1984 survey estimated just over <u>200,000 incidents</u> of <u>domestic assault</u> in England and Wales in 1983. It found in <u>12.5 per cent</u> of <u>assaults and crimes of violence the respondent reported the involvement of family, lover or ex-lovers</u>. [...]</p>

Key:

Footprint

ConEn1

Footprint

ConEn2

Footprint

ConEn3

The cotext in Table 5-1, extracted from the BNC, stems from Brake and Hale’s (1992) *Public Order and Private Lives*; a book which thematises crime. Hence, the theme of crime is established throughout the whole text. Indeed, it is also apparent at the beginning of the above cotext with a double mention of the noun *crime* in the first line.

These two nouns have been underlined and coloured in blue, because they are part of ConEn2's footprint. ConEn2 refers to the concept of 'domestic violence', which is a type of crime and is thus related to the lexical item *crime* by virtue of a hyponymic cohesive tie in a similarity chain. All other elements of this same similarity chain have also been underlined and coloured in blue. All of them refer to specific types of crime such as *sexual assault* or, in ConEn2, *domestic violence*, which are all co-hyponyms of one another. Note that in the *of*-NP's post-cotext, there are also three instances of *domestic violence* and one of *domestic assault*. These elements are part of an identity chain with ConEn2, as they all refer to the same overall concept of 'domestic violence'.

Similarly to ConEn2, *domestic violence*, the *of*-NP's ConEn1, *cases*, also has a cohesive footprint within the cotext. Indeed, the lexeme *case* is repeated several times, forming a similarity chain by the means of lexical cohesion. This similarity chain has been underlined and coloured in red. Unlike the repetition of *domestic violence* mentioned above, the repetition of *case(s)* does not constitute an identity chain, because the individual tokens refer to different cases of crime. Furthermore, there are numerous instances of percentages being mentioned within the cotext. These expressions also contribute to ConEn1's similarity chain as they reinforce the existence of individual cases of violence and crime.

Finally, having identified all members of ConEn1's and ConEn2's footprint (ConEn3's footprint is not evident in this cotext), it is possible to identify the textual function of the *of*-NP in question. In the case of *cases of domestic violence*, several functions are at hand simultaneously. Firstly, the expression functions as a means to link the two footprints together and relate them to one another in one single expression by the means of the relator *of*. Visually, this function becomes apparent in the analysis above by the presence of both footprints in both the *of*-NP's pre- and the post-cotext. This 'linking function' is discussed in more detail in Section 5.4.2 below. Secondly, *cases of domestic violence* also functions as a means to introduce a new conceptual entity to the text. ConEn1, which is established throughout the pre-cotext, introduces the new conceptual entity *domestic violence*. While the footprint of *domestic violence* is already part of the pre-cotext by virtue of its hyponymic relationship with both *crime* and *sexual assault*, the specific concept of *domestic violence* is only introduced with the *of*-NP itself, which becomes apparent when we consider the four elements in the expression's post-cotext that form an identity chain with ConEn2. This 'introduction function' of *of*-NPs shall be discussed in more detail in Section 5.4.4 below. Finally,

this leads us to the third textual function of *cases of domestic violence*, namely that of transition. In fact, by introducing the conceptual entity *domestic violence* to the cotext, the *of*-NP effects a shift of focus, moving the text's attention away from the theme of *sexual assault* to the theme of *domestic violence*. Indeed, this shift is apparent in the analysis in Table 5-1 above, by the appearance of ConEn2's identity chain in the expression's post-cotext. For a more detailed discussion of this 'transition function' of *of*-NPs, see Section 5.4.3 below.

Thus, an analysis of the three cohesive footprints' interaction with one another across the *of*-NP's cotext sheds light on the expression's textual functions. In this case, the *of*-NP *cases of domestic violence* exercises the functions of 'linking', 'introduction', and 'transition' simultaneously. Indeed, many of the 199 *of*-NPs analysed within their cotext show multiple textual functions at the same time. However, in order to discuss the various functions in more detail, they are in the following introduced in isolation and examples of cotext analyses solely focus on one of the functions at a time. Hence, Sections 5.4.1 to 5.4.5 below examine the five textual functions of *of*-NPs, 'linking', 'elaboration', 'introduction', 'transition', and 'mention' respectively. Section 5.4.6, then, contains a further cotext analysis which showcases how the five functions can be realised side by side by one and the same *of*-NP. Finally, before moving on to these analyses, Section 5.3.2.2 introduces the cotextual icons that have been used to capture the cohesive landscape of each *of*-NP in a simple but illustrative way.

5.3.2.2 The cotextual icons for *of*-NPs

The varying distribution of the three conceptual entities across each expression's cotext was captured in a so-called 'cotextual icon' as an abstract representation of each *of*-NP's cohesive landscape, which is included in each table for cotextual analysis below. The three sample icons in Figure 5-3 are given to explain these cotextual icons:

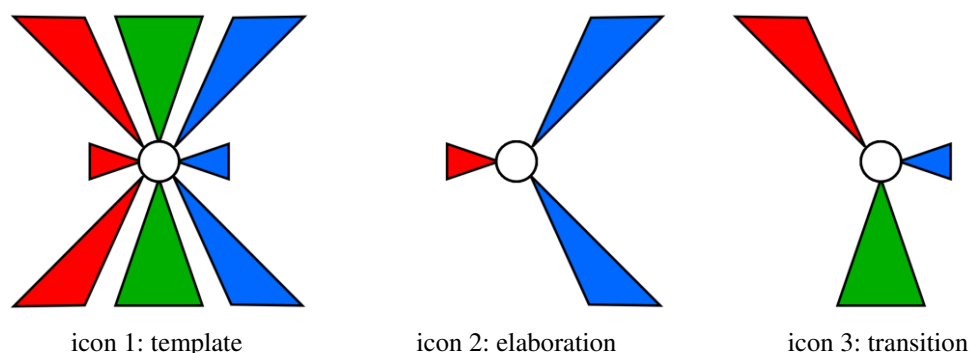


Figure 5-3: Three sample cotextual icons

The first icon in Figure 5-3 constitutes a default template, incorporating all the different elements of a cotextual icon.⁸³ The white circle in the middle of the icon represents the *of*-NP. The triangles radiating from this node represent the cohesive landscape of this *of*-NP. Following the colour scheme introduced above, the red triangles stand for the cohesive footprint of ConEn1. They are located to the left-hand side because ConEn1 always constitutes the leftward entity within an *of*-NP. Accordingly, the blue triangles represent the cohesive footprint of ConEn2 and are situated to the right due to the rightward position of ConEn2 within the *of*-NP. Finally, the green triangles represent the cohesive footprint of ConEn3. They are located in the middle of the icon, in between ConEn1 and ConEn2, because this is where the two conceptual entities are united and the *of*-NP is being referred to as a whole. Moreover, the three triangles situated above the *of*-NP node represent the expression's pre-cotext, while the three triangles below the node stand for its post-cotext. The red and the blue triangle emerging to either side of the node are used whenever ConEn1 or ConEn2 respectively are embedded within neither the pre- nor the post-cotext, but merely appear in the single instance of the *of*-NP.

These eight triangles in the first cotextual icon in Figure 5-3 can be combined differently according to the individual nature of each *of*-NP's cohesive landscape. Icon 2 in Figure 5-3, for example, indicates that this *of*-NP's ConEn2 is embedded within both the pre- and the post-cotext, while ConEn1 merely adds information to the entity of ConEn2 in the singular instance of the respective *of*-NP. This is an example of the textual function of 'elaboration' of *of*-NPs (see Section 5.4.1 below). Icon 3, on the other hand, represents a cotext where the *of*-NP causes a shift in focus from ConEn2

⁸³ In a few special cases, further elements have been added to the icon. These are explained in the respective sections in the analysis of these special types of cotexts below.

in the pre-cotext to ConEn3 in the post-cotext. This, in turn, is an example of an *of*-NP's textual function of 'transition' (see Section 5.4.3 below).

Each cotext of the 199 *of*-NPs analysed was appointed one of these cotextual icons as an abstract representation of their cohesive landscape. Overall, 28 different icons have been assigned across the 199 cotexts, all of which have been assigned to one of five textual functions. In the following, Section 5.4 first presents the overall frequencies of how ConEn1, ConEn2 and ConEn3 are embedded within their cotext. Subsequently, Section 5.4 discusses the five textual functions and illustrates them by the means of sample cotextual analyses of each. In addition, Section 5.5 addresses whether there are any statistical correlations between the type of textual function and the type of *of*-NP category, and adds further analyses to illustrate how sometimes the constructional meaning of an *of*-NP is cohesively tied to its cotext.

5.4 Results: The five textual functions of *of*-NPs

As mentioned above, the analysis of the 199 *of*-NP cotexts has revealed five different types of textual functions of *of*-NPs: 'elaboration', 'linking', 'transition', 'introduction', and 'mention'. These functions have been identified based on the nature of how the three ConEns' footprints interact with one another. Details on these different interactions are given in the individual Sections 5.4.1 to 5.4.5 below. The overall frequencies of these functions across the 199 cotexts are given in Table 5-2:

Table 5-2: The frequency of the five textual functions of *of*-NPs

	Frequency			Percent %
	Primary	Secondary	Total	
Elaboration	65	19	84	42.2
Linking	36	7	43	21.6
Transition	37	7	44	22.1
Introduction	35	8	43	21.6
Mention	26	0	26	13.1


Because *of*-NPs can have two or more of these textual functions simultaneously (see Section 5.4.6 below), the percentages in Table 5-2 do not add up to 100% nor do the total frequencies add up to 199. Each *of*-NP exerts a primary function, but some of them also have another, additional function, which has been identified as 'secondary'. Taking all of these into account, Table 5-2 illustrates that, with a total of 42.2%,

elaboration is the function most commonly realised by the 199 *of*-NPs in the cotextual dataset. This is followed by the next three functions—linking, transition and introduction—which are all almost equally frequent around 22%. The least frequent function, but still with 13.1%, is that of mention. It is important to note that these numbers are not necessarily representative of the overall frequencies of the textual functions across the phenomenon of *of*-NPs as a whole, because the 199 *of*-NPs have been chosen to include equal numbers of each type of *of*-NP category. Nevertheless, the numbers can be taken as an indication of the actual frequencies of the five functions, although further research would have to confirm these findings. In the following, each of these five functions are introduced individually, providing a detailed analysis of two cotexts per function.

5.4.1 The textual function of elaboration

The first and most frequent textual function of *of*-NPs is that of ‘elaboration’. In a case of elaboration one of the three conceptual entities is embedded within both the pre- and post-cotext of the respective *of*-NP. The other two conceptual entities are only present in the single instance of the *of*-NP and add extra information to the already established conceptual entity. Consider the two sample cotexts in Table 5-3, and later in Table 5-4:

Table 5-3: Cotextual analysis of ‘a young man of 31’ <19/c>

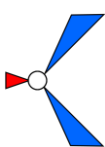
<19/c>	When Lenny McLean is brought up from the cells in his cardigan to stand trial for the murder of <u>Gary Humphreys</u> , there are no spare seats in the gallery of Court 13. [...] what has brought him to the dock in front of Judge Richard Lowry and to the possibility of spending the rest of his life locked up with robbers and rapists? THE STORY GOES LIKE this:
	a young man of 31 called Gary Humphreys
Key: <u>Footprint</u> <u>ConEn1</u> <u>Footprint</u> <u>ConEn2</u> <u>Footprint</u> <u>ConEn3</u>	from came down to London on June 1, last year. <u>He</u> had a condition known as hypomania, which makes the sufferer erratic, irrational and hyperactive. It can be contained by medication and <u>he</u> had been receiving treatment at a hospital in Salford as <u>a voluntary patient</u> just prior to <u>his</u> trip. <u>He</u> had discharged <u>himself</u> on May 30, borrowed some money from a friend and headed off to East Anglia. This was a sort of pilgrimage, as <u>his</u> father, a former Norwich City footballer, had recently died. The journey took <u>him</u> to Harwich, then Norwich, where <u>he</u> tried unsuccessfully to get the medication <u>he</u> needed from the local hospital. But the nursing staff, understandably enough, wanted to check <u>his</u> identity before prescribing the drugs. Frustrated, <u>he</u> set off for London. [...]

In this example of an *of*-NP’s cotext, ConEn3 is embedded by co-reference throughout both the pre- and post-cotext of the *of*-NP. In fact, ConEn3 refers to a male individual

called Gary Humphreys, who has been murdered by someone called Lenny McLean. The victim is first introduced in the pre-cotext by his name *Gary Humphreys*. The next reference to the same individual is then done by the *of*-NP in question. By that point we already know that Gary Humphreys is the murder victim and thus a main participant in the text. Hence, the function of the *of*-NP *a young man of 31 called Gary Humphreys* is to merely add information to an already established entity. By the addition of ConEn1 and ConEn2, we learn that the murder victim was *a young man* and he was *31* years old. Moreover, there is even a repetition of the victim's name within the postmodifier *called Gary Humphreys* which modifies the whole ConEn3 *a young man of 31*. In the expression's post-cotext, then, the text only makes reference to ConEn3 as a whole, by the means of pronouns such as *he*, *himself* or *his*, but also by other descriptive expressions such as *a voluntary patient*. At no point in the post-cotext is there another reference to the victim being a young man or to his specific age. Hence, in this cotext, the *of*-NP has got an elaborative function, adding information to an entity that is already established in the pre-cotext and continues to be so in the post-cotext.

This same function of elaboration is also apparent in the cotext in Table 5-4, an article about microcomputers. In contrast to Table 5-3, however, it is ConEn2 instead of ConEn3 which is embedded in the expression's pre- and post-cotext.

Table 5-4: Cotextual analysis of '*the enormous potential of single board microcomputers*'
<1820/c>

<1820/c>	[...] The Birth of <u>Microcomputers</u> by David King Sales Development Manager Apple Computer (UK) Limited Developments in the semiconductor industry in the early seventies led to the production of <u>microprocessor chips</u> which were fast, reliable and cheap enough to be mass produced. The mini and mainframe computer manufacturers were slow to realise
 <p>Key: <u>Footprint</u> <u>ConEn1</u> <u>Footprint</u> <u>ConEn2</u> <u>Footprint</u> <u>ConEn3</u></p>	<p>the enormous potential of single board microcomputers</p> <p>based on <u>these microprocessors</u> and it was left to the electronics hobbyists and entrepreneurs, who responded by giving birth to <u>the microcomputer industry</u>. In many ways the development of Apple Computer symbolises the development of <u>the industry</u> as a whole and it is with specific reference to Apple Computer Inc that David King attempts in this paper to put <u>the micro</u> into its true context. [...]</p>

In this cotext, ConEn2 of *the enormous potential of single board microcomputers* is embedded by both co-reference and co-extension. In both the pre- and the post-cotext there is a co-referential element referring to *single board microcomputers*. In the pre-

cotext it is the noun *Microcomputers* in the title of the article. In the post-cotext, on the other hand, it is the singular noun phrase *the micro*, which makes generic reference to the whole class of microcomputers. The other cohesive elements in the expression's cotext are co-extensional. They either make reference to microprocessor chips which are a meronymic part of microcomputers, or to the microcomputer industry which is connected with the concept of microcomputers through a relationship of producer and product. Thus, it is evident that ConEn2, *single board microcomputers*, is well embedded within the cotext. ConEn1, on the other hand only appears in one instant, namely that of the *of*-NP itself. It identifies a quality of ConEn2, namely that single board microcomputers have got enormous potential. Hence, here, ConEn1 also exerts a function of elaboration, adding information to an already established entity.

The textual function of elaboration of English *of*-NPs thus relies on one of the conceptual entities to be embedded within the cotext, while the other merely adds information to that entity in the instant of the *of*-NP itself. The two examples given above only introduced two types of this function, with two different cotextual icons: one where ConEn3 and one where ConEn2 is embedded within the expression's cotext. There are, however, further cotextual icons of elaboration. As is illustrated by the cotextual dataset in Appendix B, there are also instances where ConEn1 is embedded and ConEn2 is exerting the function of elaboration. Moreover, in some cotexts the cohesive footprint of the entity that is embedded ends with the *of*-NP in question. In other words, the cohesive footprint is only evident in the pre-cotext. In this case, the *of*-NP still exerts a function of elaboration. It just happens to occur within the last element of the whole cohesive landscape.

So far, we have looked at cotexts where only one conceptual entity is embedded within the cotext. In another type of textual function of *of*-NPs, discussed in Section 5.4.2, both ConEn1 and ConEn2 are embedded within the cotext.

5.4.2 The textual function of linking

The second textual function of *of*-NPs that has been identified within the 199 cotexts analysed involves the notion of linking, where the footprints of two conceptual entities are linked together in the instant of the *of*-NP. This type of textual function is less frequent than the first one. As indicated in Table 5-2 above, 21.6% of the 199 *of*-NPs analysed exert this function. Two example cotexts where this function of linking is evident are given in Table 5-5 and Table 5-6.

The *of*-NP in Table 5-5 consists of ConEn1 *the little constellation*, which refers to the form of an astronomical phenomenon, and ConEn2 *Scutum*, which refers to the name of that phenomenon.

Table 5-5: Cotextual analysis of ‘*the little constellation of Scutum*’ <1847/c>

<p><1847/c></p>  <p>Key: Footprint ConEn1 Footprint ConEn2 Footprint ConEn3</p>	<p>[...] AQUILA: the Eagle This is a large and splendid constellation which gives a vague impression of a bird in flight. The leading stars are Alpha or Altair (0.8), Gamma (2.7) and Zeta (3.0). Altair, at a distance of 17 light-years, is one of the closest of the bright stars. It has ten times the luminosity of the Sun, and is pure white, with an A-type spectrum. It is one of the so-called Summer Triangle. Altair is flanked to either side by a fainter star, Gamma or Tarazed and Beta (3.7); Gamma is a K-type star, very clearly orange when seen in binoculars. The line of three makes Altair particularly easy to recognize. Antares in the Scorpion is also the centre of a line of three, but the colour-difference alone means that there can be no confusion; Antares is fiery red. South of Altair there are three stars lined up: Theta (3.2), Eta (variable) and Delta (3.4). Eta is a Cepheid. It was identified as such only a short while after Delta Cephei itself, and if it had been found a few months earlier the short-period stars would probably have been known as Aquilids rather than Cepheids. Eta Aquilae has a range of from 3.4 to 4.7, and a period of 7.2 days; Beta, Delta, Theta and Iota (4.4) are useful comparisons. Eta is 440 light-years away, and can attain a luminosity well over 5000 times that of the Sun. Aquila ends to the south in a pair of stars, Lambda (3.4) and 12 (4.0). These two are the best guides to</p> <p>the little constellation of Scutum</p> <p>, with its famous open cluster M11; indeed, Scutum used to be included in Aquila, and there does not seem much justification for giving it a separate identity. The Milky Way runs right through Aquila, and is very rich, so that the whole region will repay sweeping with binoculars of any magnification. Finally, several novæ have appeared in Aquila during recent years, so that it is always worth making a check - though do not be deceived by a slow-moving artificial satellite! ARA: the Altar A far-southern constellation, lying between Theta Scorpis on one side and Alpha Trianguli Australe on the other. The chief stars are Beta (2.8), Alpha (2.9), Zeta (3.1) and Gamma (3.3). Beta and Zeta are orange; so is Eta (3.8). All three are of type K. Ara has a fairly distinctive shape. It contains several clusters within binocular range; NGC 6397, 6362 and 6352 are globular, while NGC 6167 and 6193 are loose. Of these, the most notable is NGC 6397. It is quite easy to find, close to the Beta-Gamma pair [...]</p>
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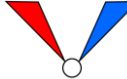
As can be seen in Table 5-5, both entities are embedded by cohesive footprints in both their pre- and post-cotext. The footprint of ConEn1 consists of expressions that make reference to the form and nature of other celestial alignments, identifying them, for example, as *leading stars*, *bright stars*, *chief stars*, or *Cepheids*.⁸⁴ The footprint of ConEn2, on the other hand, consists of names for these stars and constellations, such as *Aquila*, *Alpha*, *Beta*, *The Milky Way*, or *NGC 6397* and *6362*. Throughout the whole

⁸⁴ Cepheids are a type of star that show changes in brightness and are used to determine the distance of other galaxies from Earth (see University of Michigan 2007).

text, these names are related to their corresponding astronomical form. Thus, the footprints of both ConEn1 and ConEn2 run parallel through the whole cotext and are regularly connected with one another, including the instance of the *of*-NP in question.

In the second example of the linking function of *of*-NPs given in Table 5-6, ConEn1 and ConEn2 are again both embedded within the expression's cotext. However, in contrast to the text on celestial alignments above, the two footprints are only evident in the pre-cotext.

Table 5-6: Cotextual analysis of ‘the participants’ inaccurate view of their own skills’ <1174/c>

<1174/c>	<p>CPR TEACHERS NEED MORE WORK <u>Basic life-support skills</u> in a group of 31 resuscitation trainers were poor before they attended a two-day training course, a study at London's Royal Free Hospital found. The trainers, who included 21 nurses, two resuscitation training officers and one nurse tutor, were assessed in <u>skills</u>, confidence and experience. <u>None could perform</u> external cardiac compression <u>competently</u>; <u>only five</u> could ventilate <u>adequately</u>. The number of years qualified was unrelated to <u>initial skills</u>. <u>However</u>, the longer since qualification, the greater <u>their confidence</u> in <u>their skills</u>. Practical experience (number of arrests attended) was not related to <u>skills</u> before or after the course. After completing the course, <u>just three</u> trainers were <u>competent</u> at compressions and <u>only two</u> could ventilate <u>adequately</u>. They did <u>improve</u> in carrying out the correct sequence of treatment (assessment, open airway, check breathing, check pulse). The authors accept that the course may not have given adequate time to <u>practical skills</u>, but</p> <p><u>the participants’ inaccurate view of their own skills</u></p> <p>contributed to their lack of success. Cardiac compression technique was universally poor</p>
 <p>Key: <u>Footprint</u> <u>ConEn1</u> <u>Footprint</u> <u>ConEn2</u> <u>Footprint</u> <u>ConEn3</u></p>	

Throughout the expression's pre-cotext, the conceptual entity of ‘basic life-support skills’ is being established and thematised. In the *of*-NP, it is then made clear that participants in a training course had an inaccurate view of their own skills. This concept of inaccuracy in ConEn1 of the expression is, however, not new to the text but is also established in the pre-cotext. The discrepancy between the participants' view and their actual skills is built up throughout the text by a reference to *their confidence in their skills*, and a list of consistently low numbers of competent performances. Finally, in the second to last sentence of the text, this inaccurate view and the notion of skills are then linked in one expression, namely the *of*-NP in question.

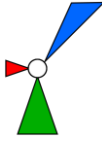
5.4.3 The textual function of transition

Thirdly, English *of*-NPs often also have a textual function of transition. With 22.1%, it is the second most frequent function of all 199 *of*-NPs. What is more, as will be argued in the paragraphs below, the function of transition is the most central of the five

functions identified and also lies at the heart of the three functions of ‘elaboration’, ‘linking’ and ‘introduction’. Before examining this connection between these three functions and the function of transition, the latter is first presented in isolation by looking at two cotexts where it is particularly evident in Table 5-7 and Table 5-8 below.

As the analysis of the 199 cotexts has shown, *of*-NPs can function as a transition point from the footprint of one conceptual entity to that of another. In other words, often the pre-cotext of an *of*-NP focuses on one conceptual entity only. The *of*-NP then relates this entity to a new one, and in the post-cotext the focus shifts to this new entity’s footprint. For example, in the cotext of the expression *The interior of the house* in Table 5-7, we can witness a transition from ConEn2 to ConEn3:

Table 5-7: Cotextual analysis of ‘*the interior of the house*’ <89/c>

<89/c>	[...] Nearby is <u>a gracious and mellow Jacobean manor house</u> . <u>Gunby Hall</u> Between Burgh-le-Marsh and the wolds is <u>one of the area’s most lovely country houses</u> , set in outstandingly beautiful gardens. Now <u>a National Trust property</u> , <u>Gunby Hall</u> was built in 1700 by the Massingberd family. <u>The house</u> is approached by a long drive through pastoral fields. The drive is lined all the way by graceful lime trees and provides the first hint as to the verity of Tennyson’s description of <u>Gunby Hall</u> in a poem dated 1849, where he describes <u>it</u> was <u>a ‘haunt of ancient peace’</u> . These words, in his own hand, are to be found, framed, inside <u>the hall</u> .
 <p>Key: <u>Footprint</u> <u>ConEn1</u> <u>Footprint</u> <u>ConEn2</u> <u>Footprint</u> <u>ConEn3</u></p>	The interior of the house
	is beautifully maintained and has <u>several lovely panelled rooms</u> , bedecked by <u>portraits</u> of virtually the entire family through the generations. Predominantly these are gracious dark oils, some by Sir Joshua Reynolds. But one, hung in the <u>dining room</u> , by <u>a window looking out</u> onto a most majestic ancient cedar tree, is strikingly different to all the others. [...]

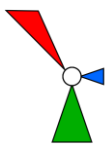
In this text, the writer describes “a gracious and mellow Jacobean manor house” called Gunby Hall. The entity is first introduced and the reader then learns about its location, its history and is then brought closer to the house by imagining “approach[ing] [it] by a long drive through pastoral fields”. Throughout this whole pre-cotext, the footprint of ConEn2 *the house* is evident through co-referential ties such as *Gunby House*, *a national trust property*, *the house*, *a haunt of ancient peace*, *the hall*, or simply *it*. In the instant of the *of*-NP, however, a particular aspect of the house is being identified, namely its interior. In other words, the new conceptual entity *the interior* is linked with the already established entity of *the house*. From then on, the text shifts its focus from the house in general to things attributed to its interior. Thus, the writer continues to

describe or mention the *several lovely panelled rooms*, the family portraits hanging in these halls, *the dining room* as well as *a window*, all aspects that are meronymically related to the interior of Gunby Hall in that they are part of it. Hence, in this cotext we can observe a transition from the footprint of one conceptual entity to that of another. In this instance, there is a shift from ConEn2 to ConEn3.

In the cotext in Table 5-8 below, a similar transition is evident, although in this case from the footprint of ConEn1 to ConEn3. In the pre-cotext of this *of*-NP, *the state of California*, only the footprint of ConEn1 is present, consisting of a similarity chain only. It consists of thirteen linguistic units which relate to ConEn1 by lexical repetition and by hyponymy and co-hyponymy. Ten of them make use of the same lexeme *state* which is then repeated in the *of*-NP's ConEn1, and all ten elements are also related hyponymically. The third element, *states*, for example, refers to all states of the USA, whereas the fourth one, *the state*, refers to a single generic one of these American states. In addition, three of the linguistic units contain the lexeme *region*, which is a hypernym of *state*. In other words, *state* is a kind of *region*. Hence, in the pre-cotext of this *of*-NP, the footprint of ConEn1 establishes the conceptual entity of 'states in the USA' in a similarity chain of co-extension.

In the instant of the actual *of*-NP, then, ConEn2 *California* is added to ConEn1 creating ConEn3 *the state of California*, and thereby singling out one individual representative of all the American states. Indeed, the text then shifts from a discussion concerning American states in general to issues specifically about the state of California. This shift becomes visible in the cotext through the fact that the post-cotext is predominated by the footprint of ConEn3 rather than ConEn1 as before. The seven elements of this footprint have been underlined and highlighted in green. Specifically, there are two identical co-referential elements *California*, which refer back to the conceptual entity *the state of California*.

Table 5-8: Cotextual analysis of ‘the state of California’ <564/c>

<p><564/c></p>  <p>Key: <u>Footprint</u> <u>ConEn1</u> <u>Footprint</u> <u>ConEn2</u> <u>Footprint</u> <u>ConEn3</u></p>	<p>[...] 8.7 Problems Develop with the <u>State</u> Implementation Plans The 1970 Act required the EPA to prescribe NAAQSs which were not to be exceeded in <u>any region</u> more than one day per year, or during more than a limited period within that day (table 8.1). [...] In 1971 the EPA promulgated NAAQSs for six ‘criteria’ pollutants, and the strict legislative timetable required <u>states</u> to submit implementation plans which would achieve primary standards for each pollutant by 1975, or, if the deadline was extended as the EPA was authorized to do, by 1977. Once primary standards were attained, <u>the state</u> was expected to attain the secondary standards ‘within a reasonable time’. In contrast with the technological fixation which had previously dominated the control strategies of <u>many states</u>, the EPA stressed that the <u>state</u> implementation plan (<u>SIP</u>) should consider incorporating transportation controls to reduce the distance travelled by all vehicles, new and old alike. [...] Having devised the <u>SIP</u>, <u>the state</u> had to present monitoring and modelling data indicating that its control programme would bring about the attainment of the primary NAAQSs. The models employed to develop the control programme vary from the simple ‘proportional’ or ‘rollback’ model which assumes, for example, that <u>a region</u> with sulphur dioxide levels twice the NAAQS will attain the standard if total sulphur dioxide emission in <u>the region</u> is halved, to more complex diffusion or dispersion models. [...] Given the strict timetable for submission of the <u>SIP</u> and attainment of NAAQSs, it was not surprising that <u>some states</u> would face enormous difficulties, not least</p> <p><u>the state of California</u></p> <p>. The seemingly impossible 1975 (or 1977 if extended as allowed under the Act) goal for attainment of the photochemical oxidant standard is highlighted by data for <u>Los Angeles</u>. In 1970 the <u>Los Angeles County</u> exceeded the <u>California</u> standard for oxidant (0.10 ppm) on 241 days of the year. [...] <u>Los Angeles Air Pollution Control District</u> believed that the <u>state</u> programme could, with no interference, achieve marked improvement in the level of photochemical smog by 1980, and that by 1990 the atmosphere would meet the ambient air quality standard (Krier and Ursin, 1977). [...] <u>California</u>’s <u>SIP</u> was rejected by the EPA because it did not provide for attainment of the photochemical oxidant standard for <u>Los Angeles</u>. [...] Seemingly valid claims by the <u>Los Angeles County</u> that such a proposal was economically and politically unrealistic contributed to undermining the EPA’s demands for maintaining strict attainment deadlines. Progress by <u>states</u> towards developing an acceptable <u>SIP</u> was further hampered by the Arab oil embargo of 1973. Several strategies were available to <u>states</u> to bring stationary sources into compliance with air quality standards. Land-use planning may be used to regulate the number and size of polluting sources within <u>any given area</u>; [...] Given these choices, <u>many states</u> opted to control sulphur dioxide emissions by regulating the maximum sulphur content of the fuel allowed to be burned.</p>
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The other five elements are part of ConEn3’s footprint by virtue of their meronymic relationship with ConEn3: they make reference to the city of Los Angeles, which is commonly part of California. While there are two cohesive ties of ConEn1’s cohesive footprint amongst these seven cohesive elements, the text’s focus is on ConEn3 and matters relating to California. Only later does the text’s attention then move back to the footprint of ConEn1 again, which is indicated by the disappearance of ConEn3’s

footprint and the reappearance of elements such as *states*, *any given area*, and *many states*.

In the two cotexts introduced above, the textual function of transition is central to the cotext and the shift from one footprint to another extends over several lines and is thus made quite obvious. However, the function of transition can also be seen as part of the other textual functions of *of*-NPs. For example, in the cotext of Table 5-4 in the section on the textual function of elaboration above, there is a very brief transition from the footprint of ConEn2, which evolves around microcomputers, to ConEn3 when it is briefly linked with its aspect of great potential. This shift in focus is less perceptible than the ones in Table 5-7 and Table 5-8 because it happens within the brief instant of the actual *of*-NP only, and then the focus immediately moves back to the footprint of ConEn2. Similarly, there is also a brief transition in Table 5-5 above, where the two footprints of ConEn1 and ConEn2 on stellar constellations and their names are both represented numerous in both the pre- and post-cotext. However, in the instant of the *of*-NP *the constellation of Scutum*, the focus of attention briefly moves away from the overall topic of *Aries* and onto the smaller constellation called *Scutum*. Indeed there are even two co-referential elements, *Scutum* and *it*, right afterwards before the focus moves back to *Aries* and constellations and their names in general.

Furthermore, it has to be noted that, like *the little constellation of Scutum* in Table 5-5, *the state of California* is an example of an appositional *of*-NP where ConEn2 *California* is identified as being ConEn1, *a state*. This particular type of *of*-NPs has the curious nature of ConEn3 being almost synonymous with ConEn2. This is due to the meaning relationship between ConEn1 and ConEn2 of this type of *of*-NP, where CONEN2 IS CONEN1 INHERENTLY (see Section 4.3.2.6 on *of*-NP category FA). In other words, ConEn1 is inherently part of the definition of ConEn2. For example, *the state of California* is really the same as *California*. Therefore, it is unclear whether the elements in the *of*-NP's post-cotext are part of the footprint of ConEn2 or that of ConEn3. While this remains unclear, this fact changes nothing about the textual function of the *of*-NP itself. Either way, in Table 5-8, the *of*-NP *the state of California* maintains the textual function of a transition away from the footprint of ConEn1 to that of another.

Thus, it can be said that the function of transition is a central cohesive aspect of *of*-NPs. Not only is it the main function of certain *of*-NPs in certain cotexts (as is the

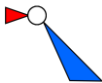
case in Table 5-7 and Table 5-8 above), but it also plays a role in the other textual functions of ‘elaboration’, ‘linking’ and, as is shown in Section 5.4.4, the function of ‘introduction’.

5.4.4 The textual function of introduction

The fourth textual function of *of*-NPs is that of introduction. It is a function that can appear in many different shapes and forms, which is why this section takes a look at four sample cotexts rather than just two. In general, the function of introduction occurs when the *of*-NP constitutes the very first element in any of its three cohesive footprints. This means that the expression’s pre-cotext does not show any traces of the expression at all, and only the post-cotext relates to the conceptual entities of the *of*-NP. Thus, the *of*-NP is used to introduce a conceptual entity to the cotext.

In Table 5-9, we can see such an instance of introduction, where the *of*-NP *the people of Scotland* is used to establish the conceptual entity *Scotland*, which is then embedded in the expression’s post-cotext.

Table 5-9: Cotextual analysis of ‘*the people of Scotland*’ <1057/c>

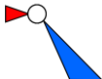
<1057/c>	Mrs. Margaret Ewing To ask the Prime Minister if he will list his official engagements for Thursday 5 March. The Prime Minister I refer the hon. Lady to the reply that I gave some moments ago. Mrs. Ewing Does the Prime Minister accept that, when
	the people of Scotland
Key: <u>Footprint</u> <u>ConEn1</u> <u>Footprint</u> <u>ConEn2</u> <u>Footprint</u> <u>ConEn3</u>	vote for independence, <u>Scotland</u> will become an equal partner with England in the European Community? The Prime Minister I think that the hon. Lady is unwise to assume that <u>Scotland</u> will react as she proposes, but in any event, were that unlikely event to occur, <u>Scotland</u> would have to reapply for membership of the European Community. Every member state would have a vote on that application. The United Kingdom’s existing membership of the European Community would continue, but <u>Scotland</u> would have to apply.

As is shown in Table 5-9, none of the three cohesive footprints are indeed present in the *of*-NP’s pre-cotext. The post-cotext, however, makes repeated reference to ConEn2, *Scotland*. Interestingly, ConEn3, *the people of Scotland*, is not at all the focus of the post-cotext. Hence, ConEn1 *the people*, merely functions as a way to introduce ConEn2, *Scotland*, which the text then further focuses on.

A similar situation can be observed in the next cotext in Table 5-10. In this cotext, the protagonist Frankie starts to crave breakfast after smelling bacon and bread that have evidently been cooked just recently in the kitchen downstairs. The notion of breakfast, which is part of the cohesive footprint of ConEn2 is introduced in absentia

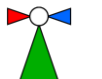
by the means of its smells in ConEn1. Frankie then indeed makes his way downstairs towards the kitchen, where he will then presumably encounter the actual breakfast whose smells he has detected.

Table 5-10: Cotextual analysis of ‘the smells of fried bacon and toasted bread’ <1919/c>

<1919/c>	[...] Although Frankie had been dozing, he was too hungry to sleep for more than a few minutes at a time. He left his cocoon of warmth, closing the folds behind him so that the damp chill of the room would not invade his secret place during his absence. He crept from the room to the shadowed corridor, tip-toed past the attic door to the little corner where the banister curved into the wall. He knew he had not been dozing very long because
 Key: <u>Footprint</u> <u>ConEn1</u> <u>Footprint</u> <u>ConEn2</u> <u>Footprint</u> <u>ConEn3</u>	the smells of fried bacon and toasted bread still drifted through the house. He guessed that she had not yet taken the man <u>his breakfast</u> . There was still time for Frankie, if he was very quiet and very careful, to eat <u>his fill</u> . From that angle he could see the lower corridor running from the great square of the hall to the heavily curtained kitchen door. That area was dark and gloomy even in the daytime, with doors leading to permanently locked rooms, padlocked cupboards and deep curtained alcoves. Here, too, was the door to the cellar, that awful place dropping beneath the main staircase into the very bowels of the house. [...]

Interestingly, in this instance, the function of introduction is linked with the constructional category of the *of*-NP involved. *The smells of fried bacon and toasted bread* contains the constructional meaning of CONEN1 INDEXES CONEN2. In other words, upon processing the *of*-NP, it is clear that ConEn2 is not actually present in the immediate situation, but its existence is being hinted at through an indexical relationship with ConEn1. In other words, the breakfast is not present in Frankie’s bedroom, but its existence is introduced to him by the means of ConEn1. Thus, similar to the cotext in Table 5-9, ConEn1 functions as a means to introduce ConEn2 and its footprint.


Table 5-11: Cotextual analysis of ‘what kinds of documents’ <1578/c>

<1578/c>	[...] As you enter Mr Kirby’s office you notice that Mr Kirby appears a little under pressure. After introducing yourself, you say ‘I’d like to talk with you about how we can improve the efficiency of your photocopying operation. I see that you use the Clearprint ZXR photocopier at the moment.
 Key: <u>Footprint</u> <u>ConEn1</u> <u>Footprint</u> <u>ConEn2</u> <u>Footprint</u> <u>ConEn3</u>	What kinds of documents do you photocopy in the sales office? ‘The discussion continues, with you attempting to assess his staff’s requirements as regards photocopying facilities and his attitude towards the Clearprint machine. One need is the ability of the photocopier to collate automatically, since <u>some of the documents which are photocopied are quite lengthy</u> . Another requirement is for the photocopy to be of the highest quality since it is usual for photocopies of <u>standard letters</u> to be sent to clients. [...]

So far, we have looked at two cotexts where ConEn1 is used to introduce ConEn2. It is, however, also possible for ConEn3 to be introduced into the cotext by the means of both ConEn1 and ConEn2, as is the case in the cotext in Table 5-11. In this cotext, the *of*-NP introduces the notion of different *kinds of documents*. In the post-cotext, then, such individual types of documents are mentioned, namely lengthy documents and standard letters. Thus, in this case, the *of*-NP functions as an introduction to ConEn3 as a whole rather than just ConEn2 as was the case in the two cotexts introduced previously.

Finally, there is another cotext that is worth mentioning in this context, as it constitutes a different kind of introduction, where the *of*-NP is used to introduce neither of the three conceptual entities, but rather another, fourth concept. Consider the cotextual analysis of an election comment presented in Table 5-12:

Table 5-12: Cotextual analysis of ‘*my copy of Friday morning’s Times*’ <154/c>

<154/c>	[...] That was done by the Tory press. In the end, victory was given to Mr Major by disgruntled Italians, disgruntled Germans, the tabloids, his own inner resources, the C2s, and God - in reverse order. Election Comment: One for the record book By CHRISTOPHER BOOKER I SHALL treasure
	my copy of Friday morning’s Times carrying the front-page headline ‘Exit polls point to certainty of a hung parliament’
Key: <u>Footprint</u> <u>ConEn1</u> <u>Footprint</u> <u>ConEn2</u> <u>Footprint</u> <u>ConEn3</u> <u>New topic</u>	<u>. It is hard to avoid the conclusion that Thursday’s extraordinary election result was one of the finest jokes played on almost everyone in sight for years. Is there honestly a single person in the country, the Prime Minister included, who could have dared to predict that the Conservatives would end up with the largest number of votes ever recorded in a British election? I am not sure even Mrs Thatcher will have appreciated the joke of her modest young protege surpassing her own record Conservative vote of 1987. It has long been one of the curiosities of our political history that the previous all-time record was set by a party that actually lost the election, Clement Attlee’s Labour Party in 1951. [...]</u>


As can be seen in this analysis, neither ConEn1 *my copy* nor ConEn2 *Friday morning’s Times* are further embedded in the post-cotext. Even so, the expression’s textual function is to introduce something, namely the concept of the political subject “Exit polls point to certainty of a hung parliament”, which is apparent within the post-determiner qualifying the whole ConEn3 *my copy of Friday morning’s Times* and is then elaborated on in the *of*-NP’s post-cotext. This topic, which has been marked in orange within the analysis and within the cotextual icon in Table 5-12 above, is introduced to the reader by the means of the *of*-NP. In fact, linking back to the function of transition examined in Section 5.4.3 above, it is used as a transition point from the

author's personal stance on the subject, to a newspaper's discussion of it, and finally to the neutral subject matter itself which is then the topic in the ongoing post-cotext. Thus, although it is not part of the post-cotext itself, the *of*-NP here functions as an introduction to a political subject.

5.4.5 The textual function of mention

Finally, the fifth and final textual function of *of*-NPs is the function of mention. It is different from the other four functions in that it does not display any interaction between the expressions' three footprints. This is due to the fact that it contains many fixed and semi-fixed expressions, which can be introduced into the cotext as whole prefabricated items. Therefore, unlike the other functions, *of*-NPs of this textual function also do not involve any transition between the footprints of different conceptual entities. Examples are given by the two cotexts in Table 5-13 and Table 5-14 with a semi-fixed and a fixed *of*-NP:⁸⁵

Table 5-13: Cotextual analysis of 'a lot of people' <503/c>

<503/c>	[...] Kylie had come of age and become a sensuous woman, just like Monroe, whom she had always loved being likened to. But what of those love-making scenes with Schlatter, the hunky 23-year-old New Jersey boy, much experienced in the art of film-making and a man of the world? How had it felt for him? 'They were difficult to do', Charlie admitted. 'I have never done a romantic film before. I had never had to do love scenes and neither had Kylie. Technically they are a problem.
 <p>Key: <u>Footprint</u> <u>ConEn1</u> <u>Footprint</u> <u>ConEn2</u> <u>Footprint</u> <u>ConEn3</u></p>	<p>A lot of people</p> <p>get the wrong idea. You don't just jump between the sheets and say, 'Hey, let's go for it. Let's have a free for all'. 'The love scenes are all finely choreographed ballets. I don't think anyone will find them offensive. If they do then I'm sorry, but there is nothing vile or nasty about what we did. 'It is a romantic movie about two young people very much in love and all that goes with that. I think anyone who has been in love will like this movie. It isn't just for kids. [...]</p>


In this cotext, the *of*-NP *a lot of people* is, as can be seen, embedded within neither the pre- nor the post-cotext. Instead, the *of*-NP is just mentioned once to make reference to a great many people in connection with the general subject of romantic films. This is partly due to the fact that *a lot of* is a semi-fixed expression that is used very frequently as a quantifier of nominal elements. On the other hand, it is also enabled by the generic noun *people*, which does not require any introduction nor elaboration as it does not refer to any specific individual, but rather to a group of people of undefined

⁸⁵ See Chapter 3, Section 3.3, on a brief discussion of fixed and semi-fixed *of*-NPs.

size. Hence, in this instance, the *of*-NP is not embedded in its cotext by any cohesive footprints but is mentioned within a cotext that relates to other concepts, such as, in this case, romantic films.

In the second cotext to be considered here in Table 5-14, the *of*-NP constitutes a fixed expression that is the name of an institution, namely *The House of Lords*:

Table 5-14: Cotextual analysis of ‘House of Lords’ <21/c>

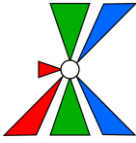
<21/c>	[...] After all every great House of Lords decision, which does not involve a departure from precedent, began with the presentation of issues at first instance. [...] Today appellate judges, apart from the Lord Chancellor, are in practice recruited exclusively from among the best High Court judges, who after serving the Court of Appeal may be elevated to the House of Lords . This is a quite extraordinarily narrow group within the legal profession. [...] This system of selection for elevation to the High Court bench and for promotion to the Court of Appeal and
 <p>Key: Footprint ConEn1 Footprint ConEn2 Footprint ConEn3</p>	House of Lords results in the character of the judiciary seeming to be self-perpetuating. The system secures a marked uniformity among the puisne judges and consequently among the appellate judges. It would also seem to discriminate against women and ethnic minorities (Cohen, 1982a). The time spent on the High Court bench will also impose its further stamp upon the potential appellate judge. [...]

In this case, the expression *House of Lords* is a fixed name which was used to designate the highest court of the United Kingdom, which is now called the *Supreme Court*. Its status as a fixed expression can be seen through its repetition within the expression’s cotext (it appears twice in the pre-cotext), but also through its frequent appearance within the corpus dataset (see Section 4.3.2.2). ConEn3 can thus be accessed as a whole and does not need to rely on the footprints of ConEn1 and ConEn2 to be embedded within its cotext. Note that the expression as a whole is indeed embedded within political and legal vocabulary such as *appellate judges*, *the High Court* and *the Court of Appeal*.

5.4.6 Instances of *of*-NPs with multiple textual functions

As has been indicated in the sections above, the four textual functions of elaboration, linking, transition and introduction can be simultaneously realised in combination by one and the same *of*-NP. In the following, I present a cotext which illustrates the full extent to which these functions can interact with one another. In fact, as we will see, the *of*-NP in the cotext in Table 5-15 exerts all of these four textual functions at once.

Table 5-15: Cotextual analysis of ‘store of value’ <1126/c>

<1126/c>	<p>[...] Consider whether <u>your nation’s paper money (bank notes)</u> meets the requirements of <u>a good monetary medium</u>. Is it acceptable, recognisable, portable and scarce? <u>Most bank notes</u> are printed on special paper that makes forgery more or less impossible, although with the passage of time, <u>new notes</u> have to be issued to replace worn-out and frayed <u>paper notes</u>. <u>Paper money and copper-nickel coins</u> are used for making payments in most countries but readers will appreciate that <u>most money</u> in advanced economies takes the form of bank deposits which are transferred between parties by means of cheque, giro and other payment mechanisms or techniques. The functions of <u>money</u> In any society or economy, <u>money</u> (bank deposits, paper notes and coins) has five main functions which must be fully appreciated and memorised to aid the reader’s understanding of banking, finance and economics. <u>Medium of exchange</u> The existence of <u>money</u> gives the consumer greater freedom of choice than could ever exist under a barter system. Providing <u>money</u> is generally acceptable, a person will take it in exchange for goods and services he sells since no difficulty will be encountered in using <u>the money</u> so acquired to purchase other goods and services desired. <u>Money</u> thus facilitates trade and specialisation, two key conditions for the economic advancement of any society or nation. <u>Unit of account Money</u> is used as a common denominator in which <u>the value</u> of things can be expressed in the market. It enables a price system to operate and facilitates the production and exchange of goods. Without <u>money</u>, some other means to measure <u>the value</u> of goods against each other would have to be used.</p>
 <p>Key: <u>Footprint</u> <u>ConEn1</u> <u>Footprint</u> <u>ConEn2</u> <u>Footprint</u> <u>ConEn3</u></p>	<p>Store of value</p> <p>In a non-monetary economy, <u>wealth</u> is measured in terms of a person’s tangible possessions - cattle, camels, grain, jewellery, etc. <u>Such wealth</u> is acceptable to others in return for goods and services. However, jewellery may be stolen, cattle may die and grain deteriorates in quality with the passage of time, thus <u>wealth</u> in these forms is inherently risky and to a certain extent illiquid, i.e. not usually suitable for instant transfer or use. In a modern economy, <u>liquid wealth</u> is <u>held</u> in the form of <u>money - bank notes</u>, and, more importantly, <u>bank deposits</u>. This provides a <u>temporary abode</u> of purchasing power for the holder which is both convenient and certain. It facilitates <u>saving</u> which is absolutely essential for the economic progress of any nation. Before <u>money</u> is accepted as <u>a store of value</u> two conditions must be satisfied: (i) <u>money</u> must retain its <u>value</u>, otherwise people will get rid of <u>it</u> in exchange for real (intrinsic) commodities; (ii) goods and services must be available in the future - wars and national crises result in a flight from <u>money</u> into non-perishable foodstuffs, cigarettes, fuel, etc. [...]</p>

In this cotext, the *of*-NP of interest is *store of value*.⁸⁶ It is embedded in a text about the various functions of money. Money is thus the primary participant within this text. What is more, because the expression *store of value* as a whole refers to money too, it is in fact the main participant of the cohesive footprint of ConEn3. This is visualised in Table 5-15 above by the majority of linguistic units marked in green, which are linked to the concept of money as part of either an identity chain or a similarity chain.

⁸⁶ Note that the expression ‘store of value’ functions as a heading within the given cotext. While this means that it does not appear in its clause or sentence, the *of*-NP still has its cotext within which it fulfils a function. Furthermore, its conceptual entities can still be shown to be tied cohesively to this cotext.

What follows is that the *of*-NP *store of value* has the function of elaboration as it adds information to the concept of money and identifies it as a means to store value.

At the same time, however, ConEn2 *value* is introduced in the expression's pre-cotext as well, by the double use of the noun phrase *the value*. In the instance of the *of*-NP, the two conceptual entities, *money* and *value*, are then linked with one another by the missing link of ConEn1, i.e. *money* (ConEn3) is the means by which *value* (ConEn2) can be *stored* (ConEn1). Hence, the *of*-NP also realises the textual function of linking.

Furthermore, the third textual function of transition is also evident. In the pre-cotext of the expression, the text discusses other functions of money, namely its status as 'medium of exchange' and 'unit of account'. With the expression 'store of money', however, the focus of the text shifts from these concepts to a more detailed examination of its function as a 'store of value'. This is visualised in Table 5-15 above by the presence of both the footprints of ConEn1 and ConEn2 in the post-cotext, indicating a transition from ConEn3 to ConEn1 and ConEn2.

Finally, the fourth function of introduction is realised by the *of*-NP being a subtitle within the text, introducing the notion of 'store of value' to the cotext. This contrasts with the later use of *a store of value* in the expression's post-cotext where this textual function is not exerted anymore.

In conclusion to this section, it has been shown that the various textual functions of *of*-NPs can all be realised simultaneously by the same *of*-NP. As is the case in the cotexts in Sections 5.4.1 to 5.4.5 above, it is usually one function that dominates the other. However, in some instances such as the one in Table 5-15 above, some *of*-NPs simultaneously have more than one textual function, each of which contribute to the expression's overall function in the cotext to an equal degree.

5.5 Results: The different *of*-NP categories within their cotext

In the previous section, five different textual functions have been identified for English *of*-NPs, namely 'elaboration', 'linking', 'transition', 'introduction' and 'mention'. While these observations have been made in relation to the notion of conceptual entities of Chapter 3, they have so far ignored the results found in the corpus analysis of Chapter 4. In other words, the five textual functions have only been identified for

the overall phenomenon of English *of*-NPs but not in connection with the 31 individual categories and subcategories of *of*-NPs identified in the previous chapter.

In Chapter 3, it was shown that the two conceptual entities, ConEn1 and ConEn2, enter a different meaning relationship from one type of *of*-NP construction to another. In other words, ConEn1 and ConEn2 can blend with a range of different constructional meanings to reach the final meaning of ConEn3. Indeed, Chapter 4 then identified 31 such constructional meaning relationships which ConEn1 and ConEn2 can be involved in. Since there are so many different kinds of *of*-NP constructions with different meaning relationships, the question arises how it is possible for a language user to dissect the meaning of an *of*-NP and interpret it with the correct meaning, i.e. choosing the appropriate constructional meaning for the interpretation of a specific expression. Offering an answer to this question, Fauconnier & Turner (2003: 44) state that “[c]ontext will typically specify some conditions of the equilibrium”. Indeed, context plays a vital role in choosing the correct blend, due to the fact that “[w]e cannot run the blend in just any way, but must somehow run it in the way that is relevant to the purpose at hand” (Fauconnier & Turner 2003: 20).

The importance of considering context for the analysis of grammatical phenomena has also been shown by other scholars. For example, Lanneau (2014), examines the influence of context on the meaning of N-N constructions. He investigates whether a different type of context would change a language user’s semantic interpretation of novel N-N expressions. In his experiment, he presented his participants with a brief text which described the daily business of two individuals. The participants had been split up into three groups and each group was given the same text, with only one difference: The two individuals were either said to be human, penguins or lobsters. After reading the text, the participants were then asked to draw a ‘crab shirt’ onto a piece of paper. An analysis of these drawings showed that participants in the ‘human group’ were more likely to draw, for example, a t-shirt with a picture of a crab on it, whereas the ‘lobster group’ more frequently drew crabs that were wearing a t-shirt. The ‘penguin group’ was located somewhere in the middle of these tendencies. In other words, based on the context they were presented with, the three groups chose different meaning relationships for the two nouns within ‘crab shirt’. Hence, with this study, Lanneau (2014) illustrates that an expression’s context

indeed plays a crucial role in the blending of two entities and the interpretation of a construction's meaning.⁸⁷

Thus, this current section investigates whether the cotextual analysis of *of*-NPs offers an insight into the behaviour of different *of*-NP constructions in cotext. Section 5.5.1 first examines whether the various types of *of*-NPs favour any of the five textual functions, while Section 5.5.2 investigates whether the constructional meaning of an *of*-NP can be traced cohesively through its cotext. What is more, this section discusses how the results of the approaches taken so far interact, and thus takes a step towards the multifaceted representation of English *of*-NPs.

5.5.1 The correlation between *of*-NP categories and the five textual functions

Table 5-16 below presents the 31 *of*-NP categories and their individual textual functions as found in the cotextual dataset. The column labelled 'Count' indicates how many instances of each *of*-NP category were included for analysis in the cotextual dataset. The five rightmost columns, on the other hand, show the frequency of each textual function with each category. Note that because every *of*-NP can simultaneously express more than one textual function, the numbers in these five columns do not add up to the number of *of*-NPs included for analysis.

Unfortunately, since there are so many different *of*-NP categories and only a maximum of seven expressions have been chosen from each for the cotextual analysis, the frequencies in each cell are too low—the expected value for each cell is 0.7 or below—to conduct a reliable statistical test for any correlation between the *of*-NP categories and the textual functions (see Field 2009: 692). Thus, a quantitative analysis of the results in Table 5-16 is not fruitful. In order for this to become possible, a larger sample of *of*-NPs would need to be analysed within cotext to increase the individual frequencies and for statistical trends to become more visible. Yet, due to the time involved in the multi-method approach and the analysis of the 199 cotexts, extending the dataset for statistical purposes was beyond the scope of this thesis and has been left for future research.

⁸⁷ Also see Nieuwland & Van Berkum (2006) who illustrate that it is the context constructed around a linguistic phenomenon that, for example, makes fictional ideas, such as peanuts falling in love, acceptable within a newly constructed, shared 'universe of discourse'.

Table 5-16: The textual functions of the individual *of*-NP categories and subcategories

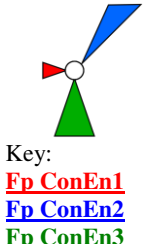
Category	Subcategory and constructional meaning	Count	Elaboration	Linking	Transition	Introduction	Mention
Possession	AA: CONEN1 IS A FEATURE OF CONEN2	7	3	2	2	-	-
	AB: CONEN1 IS A MERONYMIC PART OF CONEN2	7	3	1	3	-	1
	AC: CONEN1 IS RELATED TO CONEN2	7	1	3	5	1	-
	AD: CONEN2 IS THE SOURCE OF CONEN1	7	1	3	-	1	3
	AE1: CONEN2 POSSESSES CONEN1	7	1	1	3	2	1
	AE2: CONEN2 POSSESSES CONEN1 (STRUCT SUBCAT)	3	1	2	1	-	-
Qualification	BA: CONEN2 CLASSIFIES CONEN1	7	5	-	-	1	2
	BB1: CONEN2 QUALIFIES CONEN1 BY MATERIAL	7	5	-	1	1	1
	BB2: CONEN2 QUALIFIES CONEN1 BY LOCATION	7	2	-	1	2	3
	BB3: CONEN2 QUALIFIES CONEN1 BY TOPICALITY	7	2	2	2	2	1
	BB4: CONEN2 QUALIFIES CONEN1 BY OTHER PROPERTY	7	7	2	2	1	-
	BC: CONEN2 IDENTIFIES CONEN1	7	5	1	1	2	-
Quantification	CA1: CONEN1 QUANTIFIES AND NUMBERS CONEN2	7	3	-	-	2	3
	CA2: CONEN1 QUANTIFIES AND MEASURES CONEN2	7	6	-	-	2	-
	CA3: CONEN1 QUANTIFIES AND CONTAINS CONEN2	7	2	1	2	2	3
	CA4: CONEN1 QUANTIFIES AND CONSISTS OF CONEN2	7	4	1	-	3	1
	CA5: CONEN1 QUANTIFIES AND GROUPS CONEN2	7	-	1	2	4	-
	CA6: CONEN1 QUANTIFIES AND GRADES CONEN2	3	2	-	-	2	-
	CB: CONEN2 QUANTIFIES CONEN1	7	3	2	-	1	1
Engagement	DA: CONEN2 IS PASSIVELY ENGAGED IN CONEN1	7	4	4	-	1	1
	DB: CONEN2 IS ACTIVELY ENGAGED IN CONEN1	7	1	3	-	2	1
Selection	EA: CONEN3 IS A SUBSET OF CONEN2	7	4	1	-	2	-
	EB: CONEN3 IS A FRACTION OF CONEN2	7	3	3	1	-	1
Apposition	FA: CONEN2 IS CONEN1 INHERENTLY	7	2	1	3	1	2
	FB: CONEN2 IS CONEN1 NON-INHERENTLY	7	4	2	-	1	-
	FC: CONEN2 IS CONEN1 SUBJECTIVELY	2	1	-	-	1	-
Displacement	GA: CONEN3 IS A REPRESENTATION OF CONEN2	7	3	2	4	1	-
	GB: CONEN3 IS AN INSTANCE OF CONEN2	7	2	2	3	2	1
	GC: CONEN3 IS AN INDEX OF CONEN2	7	4	-	2	3	-
Typification	H: CONEN3 IS A TYPE OF CONEN2	7	1	3	4	1	-
Election	I: CONEN1 IS THE BEST WITHIN CONEN2	2	-	-	2	1	-

However, examining the results in Table 5-16, it is possible to make a qualitative statement about the textual functions of a few of the *of*-NP categories in context. In Table 5-16, these cases have been highlighted in grey. For example, consider the distribution of textual functions across Category B as well as Subcategory CA (see Table 5-16 for the specific constructional meaning of these category labels). Compared

to all the other categories, the textual function of elaboration is more frequent in these categories. In fact, they are the only ones where the function occurs more than four times with a single type of *of*-NP. This is topped by Subcategory BB4, where every single *of*-NP analysed exerts a function of elaboration. This trend makes sense when looking at the constructional meanings that are associated with these categories. In Category B, the meaning relationship between ConEn2 and ConEn1 is one of classification, qualification or identification, where ConEn2 gives further information about ConEn1. This constructional meaning links up with the textual function of elaboration, which also adds information to the cohesive footprint of another conceptual entity. Hence, it is not surprising to see that the constructional meaning of Category B is also reflected in its prevalent textual function. Similarly, in Subcategory CA, one conceptual entity is also adding information to the other. Specifically, ConEn1 is giving further information about ConEn2 in terms of quantity, which explains the high frequency of elaboration with, for example, Subcategory CA2.

Interestingly, however, Subcategory CA5—which includes collective nouns, where CONEN1 QUANTIFIES AND GROUPS CONEN2—is the only type of *of*-NP other than Category I, which has not been found to exert a function of elaboration. Instead, *of*-NPs with collective nouns seem to function more as an introduction or transition within their cotext. Indeed, the collective nouns seem to be used to introduce or shift to a new conceptual entity. For example, see the two cotexts of *of*-NPs from Subcategory CA5 given in Table 5-17 and Table 5-18.

Table 5-17: Cotextual analysis of ‘an archipelago of seven islands’ <298/c>

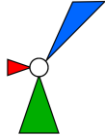
<p><298/c></p>  <p>Key: Fp ConEn1 Fp ConEn2 Fp ConEn3</p>	<p>[...] Picturesque St Teresa di Gallura on the north tip of Sardinia is the departure point for regular ferries to the spectacularly sited old town of Bonifacio. Or take a boat to <u>Maddalena Island</u> from Palau, and see some of its innumerable bays, channels, coves and promontories. <u>Maddalena</u> is set in</p> <p>an archipelago of seven islands</p> <p>, <u>one of which</u>, <u>Budelli</u>, has an amazing pink beach. Whole day cruises explore <u>the islands</u> once a week from Cannigione, and yacht trips are available too. [...]</p>
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In Table 5-17, whereas the pre-cotext only talks about one island, Maddalena, the *of*-NP *an archipelago of seven islands* introduces the reader to the new conceptual entity of a whole group of islands. Subsequently, in the expression’s post-cotext, reference is made to these islands as a group, or individual ones, such as Budelli, are identified

as being one of the group. Thus, with this expression, a transition takes place from a focus on one island only in the pre-cotext to a discussion of the whole group in the post-cotext. More importantly, however, the expression is used to introduce ConEn3 into the cotext. In other words, the collective noun exerts the function of introducing a new entity, i.e. the concept of seven islands.

Similarly, the *of*-NP *a wide range of blades* in Table 5-18 is used to introduce a subsequent list of different blades:

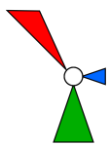
Table 5-18: Cotextual analysis ‘a wide range of blades’ <1391/c>

<1391/c>	[...] <u>Blade</u> changing is quick, with an Allen key inserted into a set screw on the inside of the show. <u>Three blades</u> are supplied with <u>the saw: an 80mm metal cutting blade</u> , and <u>two 130mm wood cutting blades</u> , for fast and fine <u>cutting</u> .
	A wide range of blades
Key: <u>Fp ConEn1</u> <u>Fp ConEn2</u> <u>Fp ConEn3</u>	is available, including <u>tungsten carbide tipped</u> , <u>blades for pruning and fence work</u> , <u>for cutting wood or plasterboard with nails embedded in it</u> , and <u>for simple curve cutting</u> , to mention a few. [...]

In this example, the *of*-NP’s pre-cotext discusses the concept of blades in great detail. In the instance of the *of*-NP, there is a transition from the discussion of blades in general to a list of different blade types. More significantly, however, the *of*-NP functions as an introduction to this list, preparing the reader for a list of blades to follow. Hence, the most prominent textual function of *of*-NPs in Subcategory CA5, which are most commonly known as collective nouns, seems to be one of introduction. More substantial research on collective nouns and their textual function needs, however, to be conducted in order to confirm this trend.

Finally, another interesting observation that can be made in Table 5-16 above is that the two *of*-NPs of Category I are associated with the textual functions of transition and introduction. As discussed in Section 4.3.2.9, these *of*-NPs feature the constructional meaning CONEN1 IS THE BEST WITHIN CONEN2. More specifically, in these *of*-NPs ConEn1 is identified as the best of its kind within the time span expressed by ConEn2. In fact, these expressions are often used as an announcement after which the ‘winning’ entity is being identified, as can be seen in the cotext in Table 5-19:

Table 5-19: Cotextual analysis of ‘the goal of the week’ <1910/c>

<1910/c>	[...] there’s good news for <u>United</u> ... <u>keeper Alan Judge</u> is fit again so he’s back and Chris Pike could also return to the attack ... they’ll have <u>a tough old game</u> on their hands tomorrow as <u>Colchester</u> are playing well and getting results ...
 <p>Key: <u>Fp ConEn1</u> <u>Fp ConEn2</u> <u>Fp ConEn3</u></p>	<p><u>the goal of the week</u></p> <p>has to be <u>the United winner against Stoke</u> ... <u>it</u> lifted them off the bottom of the table ... A Penney from heaven Read in studio <u>football</u> may have had a rough old week ... but we’ve got some celebrating to do now [...]</p>

In this example of an *of*-NP from Category I, ConEn1 *the goal* is embedded within a discussion of football in both its pre- and post-cotext. In the instance of the *of*-NP, the topic moves from football in general to the announcement of the best goal that was scored that week. Indeed, this is immediately followed by the winner of this category, *the United winner against Stoke*. Hence, the *of*-NP here functions as a way of introducing ConEn3 and making it the focus in the *of*-NP’s post-cotext. This again links up with the constructional meaning of this type of *of*-NP of identifying the best within the category of ConEn2.

Thus, even though a quantitative statement about a correlation between the different *of*-NP constructions and the five textual functions was not possible due to insufficient numbers in the cotextual dataset, it has been shown qualitatively that some *of*-NP categories, such as Category B, CA and I, do indeed seem to favour some textual functions over others. In all cases, this can be explained by a link between the respective *of*-NP type’s constructional meaning and the textual function. Section 5.5.2 elaborates further on this link between the constructional meaning of an *of*-NP and its cotext, illustrating how the meaning relationship between ConEn1 and ConEn2 can be embedded within the cotext.

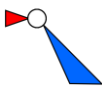
5.5.2 Tracing the constructional meaning of *of*-NPs within their cotext

In the previous section, it was shown that some of the *of*-NP categories feature a logical link between their constructional meaning and their tendency towards one of the five textual functions. In the following, an analysis of two cotexts from the cotextual dataset presents how sometimes the constructional meaning of an *of*-NP can be evident even further within the cotext.

The first cotext to be examined in the following is an extract from Terry Pratchett’s (1990) fantasy novel *Diggers*, which tells the story of a species of so-called

nomes; creatures that are in constant hiding from human beings, avoiding being seen by them at any price. The expression extracted from this novel from the BNC is *the sound of running feet* (see Table 5-20), which has been identified as part of the *of*-NP category GC with the constructional meaning of CONEN3 IS AN INDEX OF CONEN2 (see Section 4.3.2.7).

Table 5-20: Cotextual analysis of ‘the sound of running feet’ <1562/c>

<1562/c>	<p>[...] There was a crack in the woodwork by the door of the manager’s office. Dorcas slipped into the familiar gloom under the floor and padded along until he found the switch. He was rather proud of this idea. There was a big red bell on the outside wall of the office, presumably so that humans could hear the telephone ring when the quarry was noisy. Dorcas had changed the wiring so that he could make it ring whenever he liked. He pressed the switch. Nomes came running from all corners of the quarry. Dorcas waited as the underfloor space filled up, and then dragged up an empty matchbox to stand on. ‘The human has been back’, he announced. ‘It didn’t get in, but it’ll keep trying’. ‘What about your wire?’ said one of the nomes. ‘I’m afraid there are such things as wire cutters’. ‘So much for your theory about, um, humans being intelligent. An intelligent human would know enough not to go, um, where it wasn’t wanted’, said Nisodemus sourly. Dorcas liked to see eagerness in a young nome, but Nisodemus vibrated with a peculiarly hungry kind of eagerness that was unpleasant to see. He gave him as sharp a look as he dared. ‘Humans out here might be different from the ones in the Store’, he snapped. ‘Anyway -’ ‘Order must have sent it’, said Nisodemus. ‘It’s a judgement, um, on us!’ ‘None of that. It’s just a human’, said Dorcas. Nisodemus glared at him as he went on, ‘Now, we really should be sending some of the women and children to the -’ There was</p>
<div>  </div> <p>Key: Footprint ConEn1 Footprint ConEn2 Footprint ConEn3</p>	<p>the sound of running feet</p> <p>outside and the gate guards piled in through the crack. ‘It’s back! It’s back!’ panted Sacco. ‘The human’s back!’ ‘All right, all right’, said Dorcas. ‘Don’t worry about it, it can’t -’ ‘No! No! No!’ yelled Sacco, jumping up and down. ‘It’s got a pair of cutter things! It’s cut the wire and the chain that holds the gates shut and it They didn’t hear the rest of it. They didn’t need to. The sound of an engine coming closer said it all. It grew so loud that the shed shook, and then it stopped suddenly, leaving a nasty kind of silence that was worse than the noise. There was the crump of a metal door slamming. Then the rattle and squeak of the shed door. Then footsteps. The boards overhead buckled and dropped little clouds of dust as great thumping steps wandered around the office. The nomes stood in absolute silence. They moved nothing except their eyes, but they moved in perfect time to the footsteps, marking the position, flicking backwards and forwards as the human crossed the room above. A baby started to whimper. There was some clicking, and then the muffled sound of a human voice making its usual incomprehensible noises. This went on for some time. Then the footsteps left the office again. The nomes could hear them crunching around outside, and then more noises. Nasty, clinking metal noises. [...] Eventually the noise stopped. There was the thunk of a truck door closing, the growl of its engine, and the motor noise died away. Dorcas said, very quietly, ‘I think perhaps we can relax now’. Hundred of nomes breathed a sigh of relief. [...]</p>

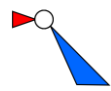
In other words, in *the sound of running feet*, ConEn1 identifies the non-immediate presence of ConEn2 by virtue of an indexical sign—in this case the sound the feet produce when running towards the nomes’ hiding place. ConEn1 is an index of ConEn2, which is, however, not immediately present.

As the analysis in Table 5-20 illustrates, the two conceptual entities *the sound* and *running feet* are embedded only minimally by their footprints. In fact, much like the smell of bacon in Table 5-10 on page 160 above, the *of*-NP here functions as a means to announce the presence of the two gate guards before they tumble into the nomes’ hiding place under the floorboards. Hence, the primary textual function of the *of*-NP is one of introduction.

However, the meaning relationship between ConEn1 and ConEn2 is further embedded in the shared knowledge of the situation. As is apparent in the expression’s pre-cotext, the nomes are currently hiding in an “underfloor space” behind “a crack in the woodwork by the door of the manager’s office”. The nomes are thus well hidden away and out of sight from any human being. Due to this, however, they also cannot learn what is happening on the outside other than by auditory signs. It is thus not unexpected that the two gate guards are first announced by the sound of their running feet rather than their immediate presence. What is more, interestingly this situation calls for a culmination of *of*-NPs of this same constructional meaning when the nomes listen to the human’s actions in the post-cotext. All of these six further expressions, such as *the sound of an engine coming closer*, *the crump of a metal door slamming* or *the rattle and squeak of the shed door*, have been marked in black, bold, underlined font in Table 5-20 above. It thus becomes apparent that the specific situation constructed in this cotext seems to call for a specific type of *of*-NP to appear, leading the reader to interpret it correctly as an instance of ConEn1 being an index of ConEn2. Hence, the constructional meaning of the *of*-NP *the sound of running feet* is not just part of the expression itself, but is logically embedded within a universe of discourse that has been built up in the pre-cotext of the expression.

The second example of a cotext which visualises the constructional meaning of the *of*-NP can be seen in Table 5-21:

Table 5-21: Cotextual analysis of ‘a long list of criteria’ <497/c>

<497/c>	[...] Providing that there was no threat to their members’ jobs, trades unions felt that they had a free hand in wage negotiations, often seeming to pluck numbers out of thin air and try it on with employers.
 Key: <u>Fp ConEn1</u> <u>Fp ConEn2</u> <u>Fp ConEn3</u>	A long list of criteria was trundled out to justify the eminent reasonableness of their wage claims: <u>their members had fallen behind in the league table of wage differentials; the cost of living had increased; productivity had risen; firms’ profits were high and their members were entitled to their ‘fair’ share.</u> [...]

The *of*-NP *a long list of criteria* of this cotext has been identified as belonging to the *of*-NP category with the constructional meaning of CONEN1 QUANTIFIES AND GROUPS CONEN2. In other words, *a long list* gives us a rough idea of the quantity of *criteria*, namely that there is not just one criterion but rather a whole group of them. This list of criteria is then made explicit in the expression’s post-cotext. It is introduced by a colon, which cohesively groups the following three items together and identifies them as individual criteria of the same list. Once again, the constructional meaning of the expression can be traced in its cotext, although, as opposed to the text on *nomes* in Table 5-20 above, this time it is only apparent in its post-cotext.

Hence, these two cotexts have illustrated that the constructional meaning, i.e. the meaning relationship between ConEn1 and ConEn2, can be logically embedded and represented within the expression’s immediate cotext, thereby offering a further aspect of how the results of the three approaches so far are interlinked.

5.6 Conclusion

Within this chapter, a so far unexplored feature of English *of*-NPs has been presented, namely the nature of these expressions’ cotext, thereby addressing the gap in previous research identified in Chapter 1, Section 1.2.2. With the novel concepts of ‘cohesive footprint’ and ‘cohesive landscape’, it has become possible to examine the textual functions of *of*-NPs. Indeed, by looking at the interaction between the three cohesive footprints of ConEn1, ConEn2 and ConEn3, the five textual functions of ‘elaboration’, ‘linking’, ‘transition’, ‘introduction’ and ‘mention’ have been found. While these functions have been introduced in isolation, it has been shown that they are often put to work simultaneously by one single *of*-NP. Furthermore, the discussion of these

functions offers a contribution to the study's main research aim, the investigation of the multifaceted nature of this grammatical phenomenon.

In addition to uncovering these textual functions, however, this chapter has also contributed to illustrating the importance of a multi-method approach. It has been shown that the three approaches discussed so far—the theoretical approach of Chapter 3, the corpus approach of Chapter 4 and the cotextual approach of the current chapter—have informed one another. This chapter has addressed the relationship between the five textual functions and the 31 individual *of*-NP categories. While it was not possible to present a statistical correlation between them due to insufficient numbers, a qualitative analysis of the frequencies has shown that there is indeed a connection between the constructional meaning of an *of*-NP and its textual function. Furthermore, it has been shown that the constructional meaning of an *of*-NP can even be cohesively tied to its cotext.

In conclusion, this chapter has shown that taking a grammatical phenomenon's cotext into consideration not only unearths its textual functions, but also supplements corpus-based categorisations of its varied nature by identifying the interaction between the results of these different approaches. In Chapter 6 a cognitive, experimental approach is taken towards the phenomenon of *of*-NPs. Like the cotextual approach of this current chapter, this next approach offers a further opportunity to shed light onto previous approaches' results. Most importantly, however, it tests the findings of the corpus approach in Chapter 4 against other experts' and non-experts' interpretation of *of*-NPs, and also sheds light on further, new aspects of the phenomenon.

6 The cognitive approach: *Of*-NP constructions from a non-linguist's perspective

The previous chapters have contributed towards this study's main aim to capture the multifaceted nature of English *of*-NPs in various ways. By viewing the phenomenon as a set of *of*-NP constructions that differ based on different meaning relationships between ConEn1 and ConEn2, Chapter 3 provided a theoretical account which allows both core and idiosyncratic examples to be included in the analysis. Chapter 4 presented a corpus analysis which identified 31 different *of*-NP constructions and thus unveiled the phenomenon's diversity and the frequencies of these various constructions. Finally, Chapter 5 analysed these *of*-NP categories within their cotext and discussed their textual functions. In combination, these chapters have thus addressed the issues of idiosyncrasy and the lack of contextual research, which were both addressed in Chapter 1, Sections 1.2.1 and 1.2.2 respectively.

However, these approaches have so far solely relied on the researcher's own interpretation and analysis of *of*-NPs. In other words, these views are entirely based on the knowledge of one linguist. As raised in Section 1.2.3 of Chapter 1, Dąbrowska (2010: 2) points out that this reliance of linguists on their own intuitions and analyses comes with an 'observer's bias', i.e. "the possibility that judgments can be influenced by the observer's beliefs and expectations". Moreover, a linguist's intuition may differ considerably to that of a non-linguist, based on the exposure the linguist has had to a specific language phenomenon (see Dąbrowska 2010: 2). Specifically, this means that the 31 categories of *of*-NP constructions that were identified in Chapter 4 and used for the cotextual analysis in Chapter 5 are solely based on my own—i.e. a linguist's—analysis of a linguistic phenomenon. However, while the methods involved in these approaches and in the interpretation of *of*-NPs have been made clear, it does not necessarily follow that this view is representative of other linguists' interpretation nor of non-linguists' intuition of how one *of*-NP differs from another.

Therefore, this current chapter seeks to counteract this observer's bias. This is achieved by the means of an experiment which tests the results of the corpus categorisation in Chapter 4 against the intuition of other experts as well as non-experts. As highlighted in red in Figure 6-1, this cognitive approach constitutes Step 6 in the extended data cycle (Section 1.4.2). It leaves the red area of the sole analyst's and

linguist's perspective, and enters the green zone where other people's interpretation of *of*-NPs (both experts' and non-experts') are taken into consideration too.

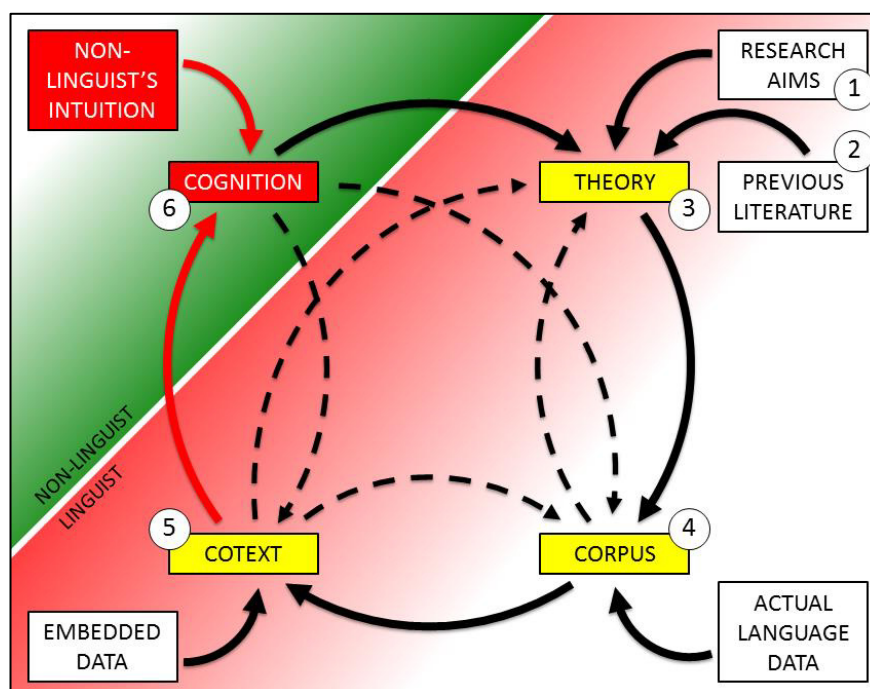


Figure 6-1: The transition from corpus and cotext to cognition in the extended data cycle

There are many different cognitive studies that could be undertaken in order to verify a number of results presented in previous chapters.⁸⁸ This study incorporates an online sorting experiment based on a previous study by Bencini & Goldberg (2000), in order to test the categorisation of *of*-NPs into 31 different constructions against other people's interpretation and to investigate whether there is any significant difference between the interpretations of *of*-NPs between experts and non-experts. For reasons of scope, the approach was restricted to testing eight of the 31 *of*-NP constructions only.

This chapter proceeds as follows: Section 6.1 introduces the methodology involved in the online sorting experiment. First, it reviews Bencini & Goldberg's (2000) study of participants' sorting of argument structure constructions,⁸⁹ which this chapter's approach has been based on. Then, it presents the adapted design of the sorting experiment with which the eight *of*-NP constructions were tested. Subsequently, Section 6.2 presents the experiment results and Section 6.3 offers a

⁸⁸ Possible experiments would include adaptations of Malt's (2013) study on object naming or Lanneau's (2014) drawing experiment.

⁸⁹ For a more detailed account of argument structure constructions, see Goldberg (1989, 1995, 2006), or see Section 3.2.2 for a brief introduction.

discussion and a conclusion to this current chapter, identifying how it has contributed towards this study's analysis of the multifaceted nature of English *of*-NPs.

6.1 Methodology: The design of the sorting experiment

6.1.1 Bencini and Goldberg's sorting task

As introduced above, the cognitive experiment used here was Bencini & Goldberg's (2000) study on argument structure constructions. Inspired by an earlier study by Healy & Miller (1970),⁹⁰ they examined whether there was any evidence that a sentence's argument structure construction contributed to the overall meaning of a sentence, or whether this was more likely achieved by the verbs involved.

As outlined in their paper, it is possible for English verbs to appear in different types of argument structure constructions. For example, the verb *take* can appear in the following four different argument structure constructions (examples taken from Bencini & Goldberg 2000: 650):

- (6-1) Audrey took the watch.
- (6-2) Paula took Sue a message.
- (6-3) Kim took the rose into the house.
- (6-4) Rachel took the wall down.

In sentence (6-1), the verb *take* appears within a transitive argument structure construction, whereas the construction in (6-2) is a ditransitive, and the one in (6-3) is a caused motion. Sentence (6-4) is a resultative argument structure construction. In addition, four similar sentences were constructed, each with three other verbs, *throw*, *get*, and *slice*, covering the same four argument structure constructions. These sixteen sentences thus shared meaning due to them either containing the same verb or sharing the same argument structure construction. All other lexical elements such as subjects or objects, on the other hand, were different across all sixteen sentences (see Bencini & Goldberg 2000: 643). Therefore, when the participants were asked to sort the sixteen sentences according to shared meaning, there were only two dimensions that could be chosen: either a lexical verbal one or a constructional one.

⁹⁰ Healy & Miller (1970) identified the verb, rather than the subject, as the main determinant of sentence meaning. They asked participants to sort a set of sentences into five categories, and found that the majority of participants would sort the sentences according to shared verbs rather than shared subjects.

The main principle underlying this sorting task with two dimensions is the idea that participants will sort unidimensionally, i.e. they will either choose to sort by the verb, or by construction, rather than creating mixed categories across the two dimensions (see Bencini & Goldberg 2000: 643). This tendency for participants to sort unidimensionally has been researched in great detail with many varying factors—including research on objects that varied across more than two dimensions—and it has been found that, whenever possible, participants will tend to choose the computationally simplest option and will sort unidimensionally (see for example Medin, Wattenmaker & Hampson 1987; Regehr & Brooks 1995; Lassaline & Murphy 1996).

Bencini & Goldberg (2000) conducted their sorting experiment twice, with a group of seventeen student participants each. The first group was given some preliminary explanations about lexical and constructional meanings, thus offering a prime towards one or the other. The second group was not given any such explanations. Participants of both groups were instructed to sort the sixteen sentences into four piles of four sentences each, although participants were not corrected if the piles ended up being unequal in size. Furthermore, it was emphasised by the instructors that there was no right or wrong answer to the experiment. After completion of the sorting task, participants were asked to briefly explain their reasoning behind their sorting tactics.

As a result, Bencini & Goldberg (2000) found that in both of their participant groups six to seven participants sorted entirely by construction. In the first group, which received preliminary explanations, no participants sorted entirely by verb, but ten of them created mixed categories instead. This may be due to the fact that the experimenters had pointed out that two sentences with the same verb may have completely different meanings (see Bencini & Goldberg 2000: 644). In the second group, on the other hand, seven of the seventeen participants sorted entirely by verb, while only four participants created mixed categories. These results suggest that people, when left to trust their own intuition, “probably see *both* verbs and constructions as relevant to establishing meaning” (Bencini & Goldberg 2000: 648, emphasis in original). Most importantly, though, this experiment illustrates that language users do have intuitive knowledge about constructional meaning and can recognise it as a possible dimension in a sorting task.

Due to this study’s focus on researching non-experts’ intuitive understanding of constructional meaning, which aligns with this chapter’s aim, its experiment design

was chosen to also test whether non-linguists would intuitively create the same constructional categories of English *of*-NPs as the ones described by the researcher in Chapter 4. While the experiment conducted for this purpose is a replication of Bencini & Goldberg's (2000) study, it does vary in multiple respects. Therefore, the design of the *of*-NP sorting experiment is presented in more detail in the following section.

6.1.2 The design of the online survey on sorting English *of*-NPs

For the purposes of this study, it was decided to devise the sorting experiment by the means of an online survey. The advantages of an online survey are manifold, although certain limitations also need to be taken into consideration. Firstly, an online survey allows economical gathering of data from more participants without the researcher having to spend time with each participant in face-to-face experiments. This higher number of participants makes statistical analysis of the results more reliable. At the same time, as we shall see in Section 6.2.1, it also enables reaching a wider audience from different social backgrounds and from locations all over the globe. Indeed, it enables research to move away from the overrepresentation of university students in participant groups, which has been a frequent criticism of cognitive and psychological research (see Foot & Sanford 2004). In addition these participants were reached via the social media platforms Twitter and Facebook, which further ensured their complete anonymity (see Section 6.1.2.3).

On the other hand, an online survey also has its drawbacks. It is, for example, not possible to control who one's participants are, and how reliable they are in giving their response. In addition, it is not possible to get detailed qualitative data from them, analysing their decision making process rather than just the end result in form of a ticked answer. However, as will be outlined below, these two disadvantages were counteracted by different features in the setup of the online survey. The former was controlled by asking the participants for some demographical data, such as their age, level of proficiency in English, and education (see Section 6.1.2.2). For the latter, each sorting task also includes comment sections where the participants are given the chance to explain their reasoning behind certain choices (see Section 6.1.2.1).

The tool chosen for this online survey was SocialSci, an online platform for academic researchers, which offers a wide range of different question types (SocialSci 2015). After testing other survey tools such as Google Forms and SurveyMonkey, SocialSci was chosen as most suitable, as it provided a wide range of different question

tools, including a drag and drop option. Furthermore, unlike other survey tools, SocialSci is free to use for academic researchers, and does not restrict one's number of participants.

In the following, the layout of the online survey is presented in three sections. Section 6.1.2.1 first introduces the layout of the sorting experiment and illustrates how it compares to the one conducted by Bencini & Goldberg (2000). Section 6.1.2.2, then, discusses the demographical data gathered as part of the online survey, and how it helps distinguish between different demographic groups. Finally, Section 6.1.2.3 briefly presents the circumferential pages of the survey. These include the initial consent statement (which asked participants for their consent for their responses to be used for research purposes and which ensured the provision for the research institution's ethical research guidelines), the introductory page and the final debriefing. A print version of the whole survey can be found in Appendix D.

6.1.2.1 The design of the sorting experiment

Following Bencini & Goldberg (2000), and as outlined in the introduction to this chapter, the main aims of the sorting experiment were to examine whether the participants would sort a set of given *of*-NPs by construction. In other words, it investigates whether the constructional meaning contributes to any degree to other people's semantic understanding of English *of*-NPs, and if so, whether their *of*-NP categories match the ones identified by the researcher. In other words, the question is whether the meaning relationships between ConEn1 and ConEn2 identified in Chapter 4 have some intuitive reality for English speakers, thus showing evidence for the semantic approach introduced in Chapter 3, or whether they do not.

Albeit different in many respects, the online survey experiment was tailored to be very similar to Bencini & Goldberg's (2000).⁹¹ Rather than just having to complete one task, my respondents were asked to complete three sorting tasks in total. Following Bencini & Goldberg's (2000) experiment design, all three tasks presented the participants with sixteen objects or with sixteen expressions and asked them to put them into four different categories based on shared features or shared meaning. The participants were further encouraged to create four categories of equal size, but were

⁹¹ The final design of the online experiment as it is presented here was reached after necessary alterations had been undertaken based on insights gathered from a pilot version of the study with responses and comments from twelve select participants.

also not forced to do so. In fact, all three experiments allowed them to put all sixteen objects or expressions into one category if they desired to do so.

The expressions that were chosen for the second and third sorting task were all based on real expressions taken from the corpus dataset (see Chapter 4). However, in some cases, they had to be altered in order to make them shorter and to diminish the possibility of lexical meanings influencing the participants' categorisation process.⁹² All expressions were given out of context. Thus, the participants had to fully rely on the expression's internal meaning and their intuitive knowledge of this phenomenon's nature. The various expressions and their original *of*-NPs are outlined in Table 6-1 and Table 6-2 below.

As outlined in Section 6.1.1 above, Bencini & Goldberg (2000) ensured that their sixteen expressions were a combination of four different verbs and four different constructions, and that no other lexical meanings occurred more than once across all sixteen sentences. For my own sorting experiments, it was not possible to recreate this pattern. This is due to two reasons. Firstly, the different nature of *of*-NPs made it impossible to find four nouns that each appeared in the same four types *of*-NP constructions, adding the further difficulty of choosing whether a given noun would appear as part of ConEn1 or ConEn2. The second reason is due to the choice of using actual *of*-NPs that had been found within the corpus dataset.

Therefore, due to the nature of the sixteen expressions, the participants were not faced with two obvious sorting dimensions as is the case with the verbal and constructional dimension in Bencini & Goldberg (2000). Instead, the two sets of sixteen *of*-NPs each presented the participants with multiple sorting dimensions rather than just two (one of which consisted of the constructional meanings of the chosen *of*-NPs). In this case, "[w]hen the variation between objects is complex in kind, [participants will] classify the object so that within-category similarity is maximized and between-category similarity is minimized" (Smith 1981: 824; also see Ahn & Medin 1992: 119). In other words, even if the variation between the different elements of the sorting task is rather complex, participants will still strive to categorise as unidimensionally as possible. Hence, even though the sets of sixteen *of*-NPs do not strictly follow Bencini & Goldberg's (2000) pattern, they can still be used to test for participants' intuitive awareness of the constructional patterns involved. In fact, since

⁹² Note that not all semantic interference could be eliminated, which allowed the participants to use the alternative sorting strategies as presented in Section 6.2.2.11

sorting by construction is one of the options that allows a completely unidimensional sorting, it was expected that participants will indeed tend to identify the expressions' constructional meaning, rather than searching for lexical similarities across the different expressions.

Moreover, in order to be able to identify participants' thought processes more easily, and whether they did indeed recognise the constructional *of*-NP patterns, each sorting task also included a section where participants were asked to briefly state their reasoning behind their categorisation, i.e. what are the defining semantic features of their categories? Thus, following Bencini & Goldberg (2000), by this means it was possible to still gather some qualitative data on the participants' categorisation process despite the anonymous nature of the online experiment.

Finally, let us take a look at the individual sorting tasks of this online experiment.⁹³ As pointed out above, this sorting experiment consisted of three different tasks. In the first task, the participants were asked to sort sixteen different objects, labelled A to P, into four categories based on shared features. These sixteen objects are given in Figure 6-2:

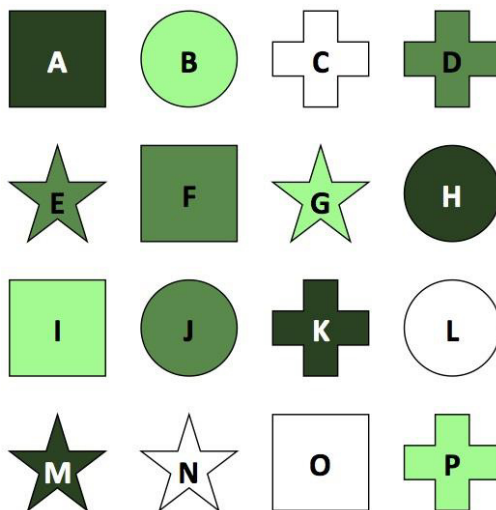


Figure 6-2: The sixteen objects of the first sorting task

The main aim of this preliminary sorting task was to introduce participants to the experiment design, so that they knew and were used to what was expected from them in the two other sorting tasks to follow. In addition, however, this first task also aimed to trigger participants' unidimensional sorting behaviour as described above, without

⁹³ See Appendix D for a print version of the complete online experiment, including the three sorting tasks.

asking them to do so directly. According to this behaviour, participants would have two straightforward possibilities to sort the objects into categories. Firstly, they could sort according to shape, putting all circles into one category, all squares into another, all crosses into a third, and all stars into a fourth. Secondly, they could choose to sort based on colour, in which case all white shapes would end up in one category, all light green ones in a second, all grass green ones in a third, and all dark green ones in a fourth. It was decided to choose four different colours of green with different intensity in order to avoid problems with potential participants suffering from colour blindness. Furthermore, there are also two less obvious options of sorting the objects based on the row or column in which they appear in Figure 6-2 above. The sorting of these sixteen pictures could be achieved by a drag and drop option, dragging sixteen cards labelled A to P on the left-hand side into four empty boxes named ‘Category 1’ to ‘Category 4’ on the right-hand side.

In the second sorting task, the participants were then asked to sort sixteen English *of*-NPs based on shared meaning. The expressions consisted of four *of*-NPs from four different *of*-NP constructions. As explained above, the expressions were taken from the corpus dataset (Chapter 4). However, some of them had to be altered slightly in order not to overwhelm the participants with overly long and complicated expressions, and to diminish the possibility of lexical interference in the participants’ sorting behaviour. The sixteen *of*-NPs and their corresponding, original expressions are given in Table 6-1, also including the individual reasons for altering them. The expressions are further presented in order of their corresponding constructional category. In the experiment itself, however, the expressions were of course shuffled, although they appeared in the same order for each participant. This was done in order to ensure consistency as well as to avoid the possibility that one participant would receive a list of expressions with the corresponding *of*-NPs already clustered together by chance.

Table 6-1: The sixteen *of*-NPs of the second sorting task

Cat	<i>of</i> -NP	Original	Reason for Altering
CA6	too much of a softie	too much of a softie <191>	
	a bit of an eyeful	a bit of an eyeful <414>	
	a tad of a miss	a tad of a miss <Google>	
	something of a mystery	something of a mystery <1044>	
CB	a waiting list of three	a waiting list of three <1788>	
	a reduction of 41 percent	a reduction of 41 percent <1032>	
	a clear majority of 58 seats	a clear majority of 58 seats <1292>	
	a span of ninety meters	a span of 90 meters <1969>	diminish the presence of numerical characters
EA	one of their airports	one of their hub airports <1098>	diminish the impact of lexical meaning
	the prettiest of this troupe	the prettiest of this troupe <1193.b>	
	most of these symptoms	most of these symptoms <1967.b>	
	some of the columns	some of the vaudeville columns <599>	diminish the impact of lexical meaning
I	the single of the week	single of the week <1554/c>	raise the presence of initial 'the' above four
	the couple of the evening	the couple of the evening <Google>	
	the goal of the year	the goal of the year <1910/c>	
	the word of the day	the word of the day <Google>	

As opposed to other *of*-NP categories, the four categories chosen for this second sorting task can be regarded as more atypical representatives of the overall phenomenon. Each category is peripheral in its own way. The first one, Category CA6, is one of the rarest types of *of*-NP categories in the corpus dataset, with only three occurrences. Indeed, as indicated in Table 6-1, a fourth *of*-NP had to be extracted from Google in order to complete the set of four. In addition to its rarity, the category is also associated with a specific meaning relationship between ConEn1 and ConEn2, namely CONEN1 QUANTIFIES AND GRADES CONEN2. Similarly, Category CB is marked by its low frequency too. With the constructional meaning CONEN2 QUANTIFIES CONEN1, it only occurs 28 times within the whole corpus dataset, and it is the only *of*-NP construction where ConEn2 expresses a quantity (see Table 4-10 on page 98). Opposed to that is Category EA, which with 122 occurrences is one of the more frequent *of*-NP categories in the corpus dataset. Its constructional meaning is one of selection, where CONEN1 SELECTS A SUBSET OF CONEN2. However, Category EA is atypical in comparison to all other *of*-NPs in that ConEn1 is restricted to pronouns or superlative adjectives, which makes it unique in its formal aspects. Finally, Category I is again

one of the rarest types of *of*-NPs. As it only occurs twice within the corpus dataset, two further expressions were added to the experiment from Google. The category is marked by its very specific and unique meaning relationship between the two conceptual entities, namely CONEN1 IS THE BEST WITHIN CONEN2. In summary, the four *of*-NP categories of the second sorting task were chosen because they constituted categories that were peripheral in one way or another. By this means, the four categories are as distinct from one another as possible, which should enable the participants to more easily recognise them as such.

This differs from the third sorting task, which aimed to achieve the opposite. In fact, for this last task, four core categories of *of*-NPs were chosen, which appear in the corpus dataset more frequently. Furthermore, they were made to look very similar to one another, in order to diminish the possibility of them being categorised on a formal basis. As illustrated by Table 6-2, which presents the four categories and their respective expressions, the sixteen *of*-NPs are all very similar to each other on a formal basis. Unlike the expressions of the second sorting task, all of these sixteen *of*-NPs' conceptual entities are clearly nominal. Furthermore, apart from a few exceptions, all of them begin with the definite determiner *the* and do not contain any modifiers. By this means, the possibility of categorisation on a formal level is reduced to a minimum, and the participants were forced to concentrate on semantic similarities for categorisation, one of which would be the constructional meaning relationship between ConEn1 and ConEn2. For Category AA, which with 275 occurrences in the corpus dataset is the most frequent type of *of*-NP (see Table 4-7 on page 88), this meaning relationship is one where CONEN1 IS A FEATURE OF CONEN2. Category DA is the second most frequent type of *of*-NP with a raw frequency of 245. Its constructional meaning is CONEN2 IS PASSIVELY ENGAGED IN CONEN1. Category FA, on the other hand, is less frequent than the others, but with 52 representatives it still constitutes a very central type of *of*-NP. Its meaning relationship is an appositional one, namely CONEN2 IS CONEN1 INHERENTLY. Finally, Category H is also less frequent with a frequency of 72, but is recognised as a very common type of *of*-NP that is also often discussed in the literature (see Section 2.2.4). Its constructional meaning is that of CONEN3 IS A TYPE OF CONEN2.

Table 6-2: The sixteen *of*-NPs of the third sorting task

Cat	<i>of</i> -NP	Original	Reason for Altering
AA	the size of the record	the size of the record <84>	
	the generosity of the crown	the generosity of the crown <1300>	
	the content of the book	the contents of the column <822>	avoid lexical ambiguity of 'column'
	the value of the crop	the value of the ultimate crop <255>	diminish the impact of lexical meaning
DA	the provision of pensions	the provision of pensions <1989>	
	the analysis of the Oedipus myth	his analysis of the Oedipus myth <1263>	assimilation
	the loss of jobs	the loss of manufacturing jobs in urban areas <1377>	diminish the impact of lexical meaning
	the scrapping of car tax	the scrapping of car tax <460>	
FA	the kingdom of Castile	the kingdom of Castile <1252.b>	
	the concept of accountability	the concept of accountability <1941>	
	the village of Lockington	the village of Lockington <1361>	
	the discipline of hermeneutics	the discipline of hermeneutics <1396.c>	
H	the species of parrot	new discovered species of parrot <1112>	diminish the impact of lexical meaning; assimilation
	the type of bread	the different types of bread <1381.b>	assimilation
	this form of skin cancer	most forms of skin cancer <937>	assimilation
	the kind of document	what kinds of documents <1578>	assimilation

6.1.2.2 Personal details

After completion of the three sorting tasks, the participants were asked a few questions about themselves. This brief questionnaire served three purposes. Firstly, it was necessary in order to examine whether intuition about the meaning of *of*-NPs differs from one group of participants to another, as predicted by Dąbrowska (2010). Specifically, it was necessary in order to be able to pool together non-linguists and analyse their interpretation of the phenomenon. Secondly, it allowed some control over who was included in the study. For example, participants who indicated that they were below 18, were excluded from the study for ethical reasons (see the consent statement in Section 6.1.2.3). Finally, it also enabled me to evaluate how effective the online distribution of the survey was, using the social media platforms Twitter and Facebook.

The personal questions asked obtained four types of information, namely information about general demographics, language skills, education, and the reach of the survey. For general demographics, the participants were asked to indicate their gender and age, while the questions on language skills asked for the respondents' first

language (L1) and their nationality. In order to obtain some information about their education, the survey asked for the participants' profession, and then, with ever-increasing detail, specifically inquired about their knowledge of linguistics, grammar, and Construction Grammar. Finally, the survey also included two questions on the participants' country of residence, and where they found the survey, enabling an analysis of the survey's reach.

6.1.2.3 *Circumference pages*

Last but not least, the online survey was embedded within three circumference pages: the consent statement, an introductory page and a debriefing page at the end (also see the print version of the survey in Appendix D). On the first page, my participants were asked to agree to the following statement:

Please read the following statement carefully:

By **completing** this survey, I (the respondent) confirm that I am **aged 18 or above**. Furthermore, I **give consent** for all my answers to be used for academic purposes by the researcher (David Schöenthal), including publications and presentations. I understand that all my answers will be **completely anonymous** and it will not be possible for any information provided to be traced back to me as an individual. I understand that *during* the completion of the survey I can withdraw from it at any time. I also understand that due to the anonymous nature of this survey, it will not be possible to withdraw my answers *after* the completion of the survey.

This disclaimer assured that my respondents understood that their answers would be completely anonymous, and that they would be used for academic purposes. The participants were only able to continue with the survey after clicking the 'Agree' button. Clicking the 'Cancel' button instead took them back to the start page of SocialSci. This consent disclaimer, as well as the rest of the online survey, conforms to the ethical standards of, and has been approved by, Cardiff University.

On the second page, after clicking 'Agree' to the consent statement, the participants then reached the actual survey, which started off with a preliminary page, introducing the participants to the survey as follows:

Hi! This survey is part of my doctoral research project in linguistics at Cardiff University (Wales, UK). The survey consists of two parts. In the first part, you will be given three tasks of categorising objects and some English expressions. In the second part, you will be asked a few questions about yourself – purely for statistical

purposes. The whole survey should take roughly 20-25 minutes maximum. Many thanks in advance for your time and input!

Very briefly, this page informed participants of the different sections of the survey—the three sorting tasks and the section with a few personal, demographical questions—and also gave them a time estimate for the whole experiment. This page was then followed by the first sorting task. Finally, the survey ended with a debriefing page, thanking the participants and providing them with my contact details in case they were interested to learn about the results of the study or learn more about the research.

6.2 Results

The online experiment as described above was published online via SocialSci and made accessible to the public for a period of three months using the social media platforms Twitter and Facebook to distribute it. During this period, the survey was accessed and started a total of 721 times, but only a total of 174 participants completed the survey. On average each participant took 22 minutes to complete the survey, with the quickest response given in 7 minutes and the longest in 2 hours and 16 minutes—excluding an outlier of 1 day 3 hours and 1 minute.

Table 6-3: The distribution of the online survey on Twitter and Facebook

Media	Number of Participants	Percentage in %
Twitter	97	55.8
Facebook	62	35.6
Other	15	8.6
Total	174	100.0

The online distribution via Twitter and Facebook was immensely successful, with the former proving particularly valuable. As is illustrated in Table 6-3 above, over half of the participants were gained on Twitter, 62 accessed the survey through Facebook, and only fifteen participants were reached via email or word of mouth.

The participants have been numbered from 1 to 174 based on their chronological completion of the survey. In the following, when referring to individual participants' problem solving strategies, they are referred to by this number, which can be found in the cognitive dataset attached in Appendix C. Section 6.2.1 now briefly presents the

demographics of the study's 174 participants. Section 6.2.2, then, discusses the participants' solutions to the three tasks and their categorisation strategies.

6.2.1 Basic demographics of participants

As opposed to the two sets of seventeen students in Bencini & Goldberg's (2000) study, by the means of an online distribution of the experiment via Twitter and Facebook, a large and diverse group of people has been reached: 174 participants from different walks of life. In terms of gender, age and nationality, the cohort is split up as presented in Table 6-4 to Table 6-6 respectively:

Table 6-4: Basic demographics of participants: Gender

Gender	Freq	%
Female	122	70.1
Male	50	28.7
Other	2	1.2
Total	174	100.0

Table 6-5: Basic demographics of participants: Age

Age Group	Freq	%
18-30	64	36.8
31-40	41	24.1
41-50	38	21.8
51-60	23	13.2
61-70	6	3.4
71 and above	1	0.6
Total	174	100.0

Table 6-6: Basic demographics of participants: Nationality and country of residence

Country	Nationality		Residence	
	Freq	%	Freq	%
UK	108	62.1	114	65.5
Ireland	7	4.0	4	2.3
USA	10	5.7	11	6.3
Canada	6	3.4	6	3.4
Australia	6	3.4	5	2.9
Switzerland	17	9.8	17	9.8
Other	20	11.5	17	9.8
Total	174	174	100.0	100.0

As illustrated by Table 6-4, more than two thirds of the participants were female, while less than a third were male. When considering age as in Table 6-5, the largest group of participants were aged between 18 and 30 with a steady decline in frequency through the age bands. There was only one participant aged 71 or above. Thirdly, Table

6-6 shows the spread across nationality and country of residence. Both of these statistics show a very similar spread with most participants coming from and/or living in the United Kingdom. The next most frequent country is Switzerland in both cases. This can be explained by the researcher's Swiss origins and thus by a higher number of Swiss friends on Facebook. Finally, the third largest group of people indicated that they either were from or lived in the States.

Furthermore, in terms of profession, the following rough spread was found:

Table 6-7: Basic demographics of participants: Profession

Profession	Freq	%
Admin	43	24.7
Student	34	19.5
Teacher	13	7.5
Academic	10	5.7
Retired	5	2.9
Unemployed	5	2.9
Other	64	36.8
Total	174	100.0

As Table 6-7 illustrates, most participants indicated that they worked in administration. Just under 20% of participants were students, while thirteen were teachers and ten indicated they worked in academia either as researchers or professors. 36.8% of participants gave another profession as their answer, which ranged from nurses, carers, IT staff and engineers to curators, steel workers and doll makers. Only five participants were retired and another five were unemployed.

Finally, and most importantly, the online survey also asked participants about their linguistic skills and knowledge. As discussed above, following Dąbrowska (2010) the analysis of participants' categories below also considers differences between linguists and people with no expert knowledge of linguistics. For this purpose, participants were asked a) whether they had ever studied linguistics either at university or for the purposes of language teaching, b) whether they had any expert knowledge of syntax specifically, and c) how well acquainted they were with the specific field of Construction Grammar. It was expected to find ever decreasing knowledge as answers to these three questions, which was indeed the case for the first two questions, as is shown in Table 6-8 and Table 6-9 below. The third question, however, had to be excluded from analysis due to technical difficulties. The third question gave

participants a scale from 0 to 5 with 0 meaning ‘no knowledge of Construction Grammar’ and 5 meaning ‘I am an expert in Construction Grammar’. The scale was given as a bar with a cursor that could be moved from 0 to 5. Unfortunately, the programme did not accept 0 for an answer, which it interpreted as the field having been left empty. Once the regulator had been moved, it could not be moved back to 0 but only to 1, a technical glitch that had not been detected before the study was launched. Due to this problem—which some participants had pointed out in the comment section at the end of the survey—many participants ended up giving answers with a number on a scale that did not correspond with their actual knowledge of Construction Grammar. For this reason, it was decided to not consider this question for the following analysis. Table 6-8 and Table 6-9 below show the frequencies and percentages of answers given to the two questions on linguistic and syntax knowledge.

Table 6-8: Participants with expert knowledge on linguistics

Linguistic knowledge	Freq	%
Yes	58	33.3
No	116	66.6
Total	174	100.0

Table 6-9: Participants with expert knowledge on syntax

Syntactic knowledge	Freq	%
Yes	19	10.9
No	155	89.1
Total	174	100.0

As shown in Table 6-8, two thirds of all participants indicated that they did not have any expert knowledge in linguistics at all, with a frequency of 116. This number increased even further when asked about expert knowledge on syntax as shown in Table 6-9. Only 10.9% of all participants claimed to have some knowledge of syntax. For the analysis of participants’ categories below, it was decided to focus on the data given in Table 6-8, as any knowledge of linguistics is considered a possible influence on the interpretation of *of*-NPs.

In addition to this division between linguists and non-linguists, participants were also asked whether English was their first language, (i.e. whether they were L1

speakers of English) or whether they had a different first language (i.e. whether they were L2 speakers of English). The frequency of answers given to this question is given in Table 6-10:

Table 6-10: Participants with L1 or L2 proficiency in English

Proficiency in English	Freq	%
L1 speakers	140	80.5
L2 speakers	34	19.5
Total	174	100.0

Thus, over 80% of participants were L1 speakers of English, and only 34 participants indicated they were L2 English speakers. Based on this split between L1 and L2 speakers, and experts and non-experts, three groups of participants were created for the purposes of analysis:

Group A: L1 non-linguists, consisting of speakers with English as their first (native) language who indicated they did not have any expert knowledge on linguistics.

Group B: L1 linguists, consisting of speakers with English as their first (native) language who indicated they had some degree of linguistic knowledge.

Group C: L2 English speakers, consisting of speakers with English as their second (non-native) language. Since they had to learn English as a second language, they are considered to have some analytic knowledge about the English language.

The frequency of these three groups of participants is given in Table 6-11:

Table 6-11: The three groups of participants with different levels of linguistic knowledge

Group of participants	Freq	%
A: L1 non-experts	103	59.2
B: L1 experts	37	21.3
C: L2 speakers	34	19.5
Total	174	100.0

For the analysis of the cognitive data, the first of these three groups is considered the most important. It allows investigation of L1 non-experts' intuition of the meaning relationships expressed within English *of*-NPs, which was the main focus of this study. The fact that Group A with 103 participants is the largest of the three, as indicated by

Table 6-11, was thus very beneficial for the following analysis. The other two groups, which are considerably smaller in size, then only served as a first means of comparison, to see whether any linguistic knowledge did have any influence on the interpretation of *of*-NPs. Hence, Section 1.2.2 analyses and discusses the participants' answers to the three categorisation tasks of the online survey and considers whether there are any differences in the analysis of *of*-NPs between these three groups.

6.2.2 The participants' categorisation strategies in the sorting experiments

In the following, Section 6.2.2.1 first briefly discusses the results from the first sorting task of the online experiment. Subsequently, Section 6.2.2.2 introduces the terminology for analysis and compares the overall results from the second and third sorting task. Sections 6.2.2.3 to 6.2.2.10, then, present the results relating to each of the eight *of*-NP categories included in the experiment. Each *of*-NP construction is analysed in terms of the participants' varying category types as well as their sorting strategies. In addition, by the means of statistical tests, it is examined whether this varying sorting behaviour is dependent on the three participant groups introduced above. Finally, before moving on to an overall discussion of the results in Section 6.3, Section 6.2.2.11 examines participants' solutions that deviated from the corpus categories the researcher had in mind.

6.2.2.1 The categorisation in Task 1: Different colours and shapes

As introduced in Section 6.1.2.1 above, the first task of the online experiment asked the participants to sort sixteen objects into four categories based on shared features. The sixteen objects were different in shape and in colour (see Figure 6-2 on page 183), which gave the participants two main options to sort them into four categories: either according to shape or colour. In addition, with the objects being presented in four rows of four, the participants could also have categorised them based on their shared location in the same row or column. However, no participant chose this categorisation strategy. The distribution of actual categorisation strategies chosen is presented in Table 6-12:

Table 6-12: The frequency of categorisation strategies in Task 1

Categorisation strategy	Freq	%
Shape	140	80.5
Colour	32	18.4
Distinct	2	1.1
Total	174	100.0

As is shown in Table 6-12, 80.5% of participants sorted the sixteen objects according to shape, and only 18.4% chose colour as the defining feature. This uneven split aligns with a trend found by research in psychology, which predicts that adults in Western societies are more likely to sort objects by form rather than colour (see Serpell 1969; Rosch 1977). In opposition to these two straight-forward categorisation strategies, two participants chose a different approach to solving Task 1. Rather than sorting the sixteen objects according to their shared shape or colour, these two participants created categories each containing four objects that did not share any features at all. As participant 103 explains, “[t]he shared feature is that they are all unique in colour and shape”.

What all these three categorisation strategies of Task 1 have in common is that they are examples of unidimensional sorting (Medin et al. 1987; Regehr & Brooks 1995; Lassaline & Murphy 1996), although the third strategy may appear less obvious than the first two. Thus, the aim of Task 1—to trigger a unidimensional behaviour—was successful with all participants. However, as pointed out in Section 6.1.2.1 above, it was more important for Task 1 to introduce participants to the task design of the two tasks to follow involving examples of English *of*-NPs.

6.2.2.2 The overall categorisation of English *of*-NPs in Tasks 2 and 3

Each participant’s solution to the two categorisation tasks of English *of*-NPs was matched against the researcher’s approach in order to identify whether the participants intuitively chose the same problem solving strategy as the researcher, or whether they came up with different types of categories. As a reminder, the *of*-NPs chosen for the two categorisation tasks were based on eight *of*-NP categories that had been identified in the corpus analysis presented in Chapter 4. Likewise, the researcher’s solution to the two tasks (see Table 6-1 and Table 6-2 above) is also based on these categories. Therefore, participants’ categories that match the researcher’s solution are henceforth referred to as ‘corpus categories’. In these cases, because all four expressions in a

category matched the corpus category exactly, these category types were given a rating of 4.

However, participants did not always reproduce the corpus categories, but came up with different category types instead. These were rated similarly in relation to the relevant corpus category, as summarised in Table 6-13:

Table 6-13: The rating system for different category types

Category rating	Category definition	Category label
4	Contains all four relevant <i>of</i> -NPs	Corpus category
4+	Contains all four relevant <i>of</i> -NPs plus one or more other expressions	Approximating category
3	Contains three relevant <i>of</i> -NPs plus no other expressions	
3+	Contains three relevant <i>of</i> -NPs plus one or more other expressions	
2	Contains a maximum of two <i>of</i> -NPs from the same corpus category	Deviating category
1	Contains a maximum of one <i>of</i> -NP from the same corpus category	
0	Category left completely empty	

Category types which contained all four expressions of the corpus category but also one or more additional expressions (i.e. the categories contained more than four *of*-NPs) were rated 4+. Category types that contained only three expressions of the same corpus category and no additional expressions were rated 3, and 3+ if they did contain additional expressions. These three category types, because the majority of included *of*-NPs stems from one specific corpus category, are in the following referred to as ‘approximating categories’. Furthermore, category types that only contained two or fewer *of*-NPs from the same corpus category were rated 2 or 1. In one single instance, a category was rated 0, because the participant had left it completely empty. These category types are referred to as ‘deviating categories’ as they cannot be related to one of the corpus categories. Moreover, in the analysis in Sections 6.2.2.3 to 6.2.2.10, they are always grouped together. Only in Section 6.2.2.11, are they analysed in their own right, where I present the alternative categorisation strategies found with these deviating category types. Sections 6.2.2.3 to 6.2.2.10 investigate each individual corpus category and their corresponding, approximating categories the participants came up with. In addition, they present the analysis of how these approximating categories diverge from the corpus categories and what the participants’ different categorisation strategies were that led them to their individual category types.

Before delving into the analysis of the eight individual corpus categories, however, let us take a look at the overall results across the two categorisation tasks, Task 2 and Task 3. As a reminder (see Section 6.1.2.1 above), the sixteen expressions in Task 2 have been taken from four corpus categories that were either very idiosyncratic in nature or formally distinct from other, more typical *of*-NPs. In contrast, the sixteen *of*-NPs in Task 3 are members of more frequent corpus categories and were more structurally alike. As a result, the expressions in Task 2 were thought to be more easily identifiable as different types of *of*-NPs and it was expected that participants would be more likely to reproduce the corpus categories.

By the means of the rating system introduced above, it became possible to compare the two tasks and how close participants got to reproducing the corpus category. Consider Table 6-14 and Table 6-15, which illustrate the token and type frequency of the different category ratings.

Table 6-14: Distribution of participants' category tokens per task

Category label	Number of category tokens in Task 2		Number of category tokens in Task 3	
	Freq	%	Freq	%
Corpus categories	382	54.9	196	28.2
Approximating categories	237	34.1	254	36.5
Deviating categories	77	11.1	246	35.3
Total (174 times 4)	696	100.0	696	100.0

With 174 participants and four categories per task, 696 category tokens were created for each of the two tasks. Table 6-14 illustrates how these 696 category tokens were distributed over the three different category labels (i.e. the different category ratings). In Task 2, 54.9% of category tokens corresponded with one of the corpus categories and were rated 4. In comparison, Task 3 only yielded 28.2% of corpus category tokens within the total of 696. In contrast, with 11.1% Task 2 has got a very low frequency of deviating category tokens, while Task 3 scored much higher with 35.3%. The middle field of approximating categories was almost the same for both tasks with 34.1% in Task 2 and 36.5% in Task 3. This difference between the two tasks' distribution of category tokens confirms the initial hypothesis that participants would approximate the researcher's solution more in Task 2 than Task 3. A further confirmation of this

fact is given by each task's frequency of different category types as shown in Table 6-15:

Table 6-15: Distribution of participants' category types per task

Category label	Number of category types in Task 2		Number of category types in Task 3	
	Freq	%	Freq	%
Corpus category	4	3.1	4	1.7
Approximating category	74	57.4	95	40.9
Deviating category	51	39.5	133	57.3
Total	129	100.0	232	100.0

While each task yielded the same number of category tokens due to the limited format of the experiment, they each produced different numbers of category types as a result of different participants coming up with the same categories. As Table 6-15 illustrates, the 174 participants have created a total number of 129 different category types in Task 2, and a total of 232 different category types in Task 3. Each task only yielded four different corpus category types, which is logical as there are only four corpus categories per task that correspond with the researcher's solution. Instead, the main difference in the number of category types between Task 2 and Task 3 lies with the deviating categories. Task 2 only produced 51 such categories, while the results to Task 3 contained a total of 133 different deviating categories. Hence, in Task 2 participants agreed more on the nature of the different categories, while there was a higher diversity of category types in Task 3, which is indicative of the fact that, as predicted, the *of*-NPs in Task 3 were more difficult to categorise, possibly due to their more similar structural nature.

Finally, a third indication of the different levels of difficulty between Task 2 and Task 3 is given by Table 6-16 which illustrates the frequency of corpus categories per participant per task. In other words, it shows how many participants reproduced either four, two, one or zero corpus categories in each task.

Table 6-16: Participants' individual number of corpus categories per task

Corpus categories per task	Participants in Task 2		Participants in Task 3	
	Freq	%	Freq	%
4	55	31.6	22	12.6
2	60	34.5	20	11.5
1	42	24.1	68	39.1
0	17	9.8	64	36.8
Total	174	100.0	174	100.0

Again, Table 6-16 shows a similar picture to Table 6-14 and Table 6-15 above. The number of participants who reproduced all four corpus categories is considerably higher in Task 2 than Task 3 with a difference of 19%. The same trend occurs when looking at the number of zero matches per task, which only occurred seventeen times in Task 2 but a total of 64 times in Task 3. Indeed, 66.1% of all participants reproduced two or four corpus categories in Task 2, whereas the opposite is true in Task 3. There, 75.9% of all participants only reproduced one corpus category or indeed none at all. Thus, this once more illustrates that the corpus categories of Task 3 were not as apparent to the participants as the ones in Task 2.

However, in order to say more about the accuracy of the corpus categories (which are based on the researcher's analysis of the corpus dataset in Chapter 4) and whether they correspond with the participants' understanding and interpretation of the phenomenon, it is necessary to look at the solutions to, and comments on, each individual *of*-NP category in turn. Thus, a more detailed analysis for each individual type of *of*-NP and the participants' categorisation strategies for each are given in Sections 6.2.2.3 to 6.2.2.10. As an overview of these eight types of *of*-NPs used in the experiment and the degree to which the participants' responses matched the corpus categories, consider Table 6-17 below.

Table 6-17: The frequency of matches for each type of *of*-NP

		Corpus category tokens	Approximating category tokens	Deviating category tokens	
Exemplar expression					Section
Task 2	<i>The word of the day</i>	115	56	3	6.2.2.3
	<i>A waiting list of three</i>	120	50	4	6.2.2.4
	<i>A bit of an eyeful</i>	92	64	18	6.2.2.5
	<i>One of their airports</i>	55	67	52	6.2.2.6
Task 3	<i>The provision of pensions</i>	37	111	26	6.2.2.7
	<i>The size of the record</i>	29	46	99	6.2.2.8
	<i>The kingdom of Castile</i>	36	40	98	6.2.2.9
	<i>The type of bread</i>	94	57	23	6.2.2.10

6.2.2.3 The categorisation of type 1.1: *The word of the day*

The first type of *of*-NP to be discussed here is the one of Corpus Category I (see Section 4.3.2.9) including the four expressions *the single of the week*, *the couple of the evening*, *the goal of the year* and *the word of the day*, where CONEN1 IS THE BEST WITHIN CONEN2. As discussed in Section 4.3.2.9, the peculiarity of this type of *of*-NP is that the meaning of ‘the best of its category’ is not part of the lexical meanings of ConEn1 or ConEn2. For example, *the word* and *the day*, on their own, do not convey any meaning of prominence. Only once ConEn1 and ConEn2 are linked together in an *of*-NP construction does this meaning emerge. This implies that the meaning of ‘the best of its category’ is part of the constructional meaning of this type of *of*-NP. In the following, we shall see how the participants of the online experiment dealt with this type of *of*-NP and whether and to which degree its particular constructional meaning was recognised.

As shown in Table 6-17 above, a total of 115 participants recreated the corpus category for this type of *of*-NP. Another 56 participants produced approximating categories and only three participants created deviating ones. In order to really understand the participants’ reasoning behind their categorisation process, however, it is necessary to examine the corpus categories and approximating categories in relation with the participants’ individual explanations given in each category’s commentary box. Note that the deviating categories have been excluded from this analysis, as they

are deemed too ambiguous as to which *of*-NP type they relate to. Table 6-18 illustrates these results in more detail.

Table 6-18: Participants' interpretation of *of*-NP category I

	Best of (constructional)	Singles out 1 (constructional)	Time reference (lexical)	Structural	Does not know	Unclear	Total
Corpus category	45	16	40	8	2	4	115
3 of same category	1	-	-	-	-	-	1
4 of same category + <i>the prettiest of this troupe</i>	27	4	-	2	-	-	33
3 of same category + <i>the prettiest of this troupe</i>	6	5	-	-	-	-	11
3 of same category + <i>one of their airports</i>	-	4	-	-	-	-	4
Other approximating categories	-	6	-	-	-	1	7
Total	79	35	40	10	2	5	

As Table 6-18 illustrates, the constructional meaning of 'the best in its category' of this first type of *of*-NP was indeed picked up on by a total of 79 participants. A few examples of the explanations for the categorisation by these participants are given in (6-5) to (6-9). Alongside each example, the participant's number is given in parentheses.

- (6-5) the best of something with a time expression (participant 18)
- (6-6) "the X of the X" means "the best X of the X" (participant 88)
- (6-7) pop prizes (participant 99)
- (6-8) Judgments measured against spans of time (participant 118)
- (6-9) Demonstrates that something is the chosen one of its kind, defined by it being selected from all others within a certain time-frame (participant 146)

However, only 45 participants identified the constructional meaning by simultaneously recreating the corpus category. One participant did so even though they only put three of the *of*-NPs into the category. The remaining 33 participants, however, included another expression in the same category, namely *the prettiest of this troupe*. This *of*-NP does indeed contain the meaning of 'best in its category' too, but it is part

of the lexical meaning of the superlative *prettiest* rather than the expression's constructional meaning. Hence, these participants grouped these expressions together not based on their shared constructional meaning, nor any shared lexical meaning, but just based on shared meaning in general, still recognising the constructional meaning in the four initial *of*-NPs of the corpus category.

Furthermore, Table 6-18 also indicates that 35 participants identified another element of the constructional meaning of this type of *of*-NP, sixteen of which did so by recreating the corpus category. The constructional meaning referred to here is the fact that *the word of the day*, for example, singles out one particular word from a group of words. Nine further participants also detected this meaning in *the prettiest of this troupe*, which, by virtue of the superlative, also just refers to one individual. In addition, four more participants did the same with the *of*-NP *one of their airports*, even though this expression does not contain the first constructional meaning of 'the best in its category'.

Another popular dimension by which the four *of*-NPs ended up in the same category was shared lexical meaning. As shown in Table 6-18, 40 participants recognised that the four expressions in question all contained a time period—i.e. *year*, *month*, *day*, *evening*. They did not, however, mention the constructional meaning of the rest of the expression at all. In addition, ten participants sorted by structural similarity rather than shared meaning—e.g. "The thing of the thing" (participant 125) or "2 definite articles" (participant 134). Two participants said they could not explain their reasoning behind their choice of categories, while the explanation of five participants' categories was unclear.

Finally, Table 6-19 and Table 6-20 examine the distribution of both the categorisation strategies as well as the different category types across the three participant groups 'L1 non-expert', 'L1 expert' and 'L2 speaker'. The tables are organised as follows: The columns are divided into the three participant groups, while the rows indicate the different approaches to the respective expressions. Note that the greyed area of the rows consists of two columns. The rightward one splits the categorisation strategies or category types up more delicately. The leftward column, on the other hand, groups several of them together. In the case of the categorisation strategies, this column only distinguishes between constructional, lexical and structural approaches. In addition, it groups together as 'invalid' unclear cases and instances where participants did not know what the shared meaning of their categories

was, and also represents deviating categories. In the case of the category types, this leftward column only distinguishes between corpus, approximating, and deviating categories. These two levels of delicacy for the tables' rows have been chosen for statistical reasons. The results of the relevant statistical significance tests of each cross-tabulation are given in the double framed box in the top left corner of each table. These results were calculated by the means of the statistical software programme SPSS (see IBM Corp 2011). They indicate whether the distribution of the different categorisation strategies or category types is dependent on the three participant groups. The two levels of delicacy in the tables' rows are used to examine whether the significance level is dependent on the more delicate division of the variables, or whether it is also apparent in the rough division between, for example, corpus category, approximating categories and deviating categories. Each table thus contains two rows of significance values in the top left corner: one for the ungrouped, more delicate values, and one for the grouped, broader values. The results of the other seven *of*-NP categories are presented in similar tables.

Table 6-19: The categorisation strategies across the three participant groups for *of*-NP category

I

<u>Significance—ungrouped (grouped)</u> <i>Expected cell count <5—52.4% (53.3%)</i> <i>Chi Square Test—0.270 (0.154)</i> <i>Fisher's Exact Test—0.252 (0.180)</i>		L1 Non-Experts		L1 Experts		L2 Speakers		Total
		Freq	%	Freq	%	Freq	%	
Constructional	Best of	44	42.7	21	56.8	14	37.8	79
	Singles out 1	23	22.3	5	13.5	7	18.9	35
Lexical	Time reference	27	26.2	5	13.5	8	21.6	40
Structural	Structural	3	2.9	5	13.5	2	5.4	10
Invalid	Does not know	1	1.0	-	0.0	1	2.9	2
	Unclear	2	1.9	1	2.7	2	5.9	5
Deviating	Deviating categories	3	2.9	0	0.0	0	0.0	3
Total		103	100.0	37	100.0	34	100.0	

Table 6-20: The category types across the three participant groups for *of*-NP category I

<i>Significance—ungrouped (grouped)</i> <i>Expected cell count <5—66.7% (33.3%)</i> <i>Chi Square Test—0.254 (0.671)</i> <i>Fisher's Exact Test—0.489 (0.911)</i>		L1 Non-Experts		L1 Experts		L2 Speakers		Total
		Freq	%	Freq	%	Freq	%	
Corpus	Corpus category	66	64.1	25	67.6	24	70.6	115
Approximating	3 of same category	-	0.0	-	0.0	1	2.9	1
	3 or 4 of same category + <i>the prettiest of this troupe</i>	24	23.3	12	32.4	8	23.5	44
	3 of same category + <i>one of their airports</i>	4	3.9	-	0.0	-	0.0	4
	Other approx. categories	6	5.8	-	0.0	1	2.9	7
Deviating	Deviating categories	3	2.9	-	0.0	-	0.0	3
Total		103	100.0	37	100.0	34	100.0	

As Table 6-19 and Table 6-20 illustrate, the *of*-NPs of Category I have been analysed similarly across all three participant groups. Table 6-19 indicates that the three participant groups showed similar behaviour in terms of their categorisation strategies. In all groups, the most frequent strategy chosen was the constructional meaning ‘best of’, although the L1 experts did so most often with a frequency of 56.8%, while the L2 speakers only reached 37.8% of constructional sorting strategies. However, the significance values in Table 6-19 show that this distribution is statistically insignificant, as Fisher’s exact test⁹⁴ indicates a *p*-value of 0.252 for the ungrouped and 0.180 for the grouped values, which is above the significance level of 0.050. Furthermore, as illustrated in Table 6-20, around two thirds of the participants in all three groups recreated the corpus category and the spread of the approximating categories is also similar. Indeed, Fisher’s exact test shows that the distribution of the category types across the three participant groups is insignificant with a *p*-value of 0.489 for ungrouped and 0.911 for grouped values, and that the two variables are thus not dependent on one another.

Hence, it has been shown that *of*-NPs such as *the word of the day* are recognised as part of the corpus category to an equal degree by all three participant groups, and

⁹⁴ Fisher’s exact test is related to Pearson’s chi-square test and is used to test whether there is a significant dependency between two categorical variables. Both tests compare the values in a crosstabulation with the values that were to be expected if the two variables were completely independent. Fisher’s exact test is preferred to the chi-square test if more than 20% of the expected cell values are below 5 (see Field 2009: 688–691).

that there is no significant difference between L1 experts and non-experts. This insignificance is furthermore also not dependent on the delicacy of the crosstabulations. What is more, many participants have recognised the constructional meaning of these expressions, which confirms them as an existing category of *of*-NP constructions from a perspective external to the researcher.

6.2.2.4 The categorisation of type 1.2: A waiting list of three

The second type of *of*-NP in Task 2 is the one of corpus category CB (see Section 4.3.2.3) with the four expressions *a waiting list of three*, *a reduction of 41 percent*, *a clear majority of 58 seats* and *a span of ninety meters*. The meaning relationship between ConEn1 and ConEn2 in this type of *of*-NP is such that CONEN2 QUANTIFIES CONEN1. Like the first type of *of*-NP above, for this type most participants also recreated the corpus category. In fact, Table 6-17 on page 200 above indicates that only 4 participants created deviating categories with this type of *of*-NP. 50 other participants created approximating categories, while the remaining 120 recreated the corpus category.

Examining the categorisation strategies behind these different groupings, Table 6-21 below illustrates that most participants put these expressions into the same category based on them either containing a specific number (participants only identified the numerical aspect of the expressions) or a quantity (participants indicated that the number in the expression functions as a quantity). Only seven participants specifically identified the function of this quantity as quantifying ConEn1, which would be the explicit constructional meaning of this type of *of*-NP. However, while Table 6-21 splits these explanations into constructional and lexical ones, it is not possible to determine whether the participants that only chose a lexical explanation were aware of the fact that the quantity or number they identified functioned as a quantifier of the expression's ConEn1 or not. Either way, the results for this type of *of*-NP show that they are recognised as a distinct type of *of*-NP by most participants.

Table 6-21: Participants' interpretation of *of*-NP category CB

	Amount of (constructional)	Quantity (lexical)	Numbers (lexical)	Structural	Does not know	Unclear	Total
Corpus category	7	67	38	2	3	3	120
3 of same category	-	4	2	-	2	-	8
4 of same category + <i>one of their airports</i>	-	5	8	-	-	1	14
4 of same category + <i>the couple of the evening</i>	-	-	2	-	-	-	2
3 of same category + <i>one of their airports</i>	-	10	6	-	-	-	16
3 of same category + <i>the couple of the evening</i>	-	1	1	-	1	-	3
3 of same category + <i>The prettiest of this troupe</i>	-	1	1	-	-	-	2
Other approximating categories	-	1	1	1	-	2	5
Total	7	89	59	3	6	6	

Furthermore, of the 50 participants who created approximating categories, eight created a category containing only three of the four expressions and no fourth *of*-NP. The remaining 42 grouped three or four of the expressions together with an *of*-NP from another category. Most frequently the expression *one of their airports* was put into this category, followed by *the couple of the evening* and *the prettiest of this troupe*. The reason for including these three expressions is that they all contain a specific quantity as well. *One of the airports* and *the prettiest of this troupe* both identify one singular entity. In the case of *the couple of the evening*, participants must have interpreted *the couple* as a quantity identifying two individuals. Hence, in these cases, participants grouped together *of*-NPs which contained specific quantities irrespective of whether they were part of ConEn2 or ConEn1.

Analysing these results against the three participant groups yields the following results as presented in Table 6-22 and Table 6-23:

Table 6-22: The categorisation strategies across the three participant groups for *of*-NP category CB

Significance—ungrouped (grouped) <i>Expected cell count <5—71.4% (73.3%)</i> <i>Chi Square Test—0.182 (0.258)</i> <i>Fisher's Exact Test—0.070 (0.099)</i>		L1 Non-Experts		L1 Experts		L2 Speakers		Total
		Freq	%	Freq	%	Freq	%	
Constructional	Amount of	2	1.9	3	8.1	2	5.9	7
Lexical	Quantity	54	52.4	18	48.6	17	50.0	89
	Numbers	39	37.9	9	24.6	11	32.4	59
Structural	Structural	-	0.0	2	5.4	1	2.9	3
Invalid	Does not know	5	4.9	1	2.7	-	0.0	6
	Unclear	1	1.0	3	8.1	2	5.9	6
Deviating	Deviating categories	2	1.9	1	2.7	1	2.9	4
Total		103	100.0	37	100.0	34	100.0	

Table 6-23: The category types across the three participant groups for *of*-NP category CB

Significance—ungrouped (grouped) <i>Expected cell count <5—71.4% (33.3%)</i> <i>Chi Square Test—0.183 (0.146)</i> <i>Fisher's Exact Test—0.090 (0.750)</i>		L1 Non-Experts		L1 Experts		L2 Speakers		Total
		Freq	%	Freq	%	Freq	%	
Corpus	Corpus categories	65	63.1	26	70.3	29	85.3	120
Approximating	3 of same category	7	6.8	1	2.7	-	0.0	8
	3 or 4 of same category + <i>one of their airports</i>	21	20.4	8	21.6	1	2.9	30
	3 or 4 of same category + <i>the couple of the evening</i>	5	4.9	-	0.0	-	0.0	5
	3 of same category + <i>the prettiest of this troupe</i>	1	1.0	-	0.0	1	2.9	2
	Other approx. categories	2	1.9	1	2.7	2	5.9	5
Deviating	Deviating categories	2	1.9	1	2.7	1	2.9	4
Total		103	100.0	37	100.0	34	100.0	

Similar to the first type of *of*-NPs examined above, this second type also does not show a significantly different distribution across the three participant groups. As shown in Table 6-22, L1 non-experts, L1 experts and L2 speakers have all grouped the expressions together by quantity around 50% of the time, followed by number, with a low constructional sorting frequency. This distribution is identified as insignificant by

Fisher's exact test at a p -value of 0.070 for ungrouped and 0.099 for grouped values. Equally, Table 6-23 illustrates that the distribution of category types is independent of the three participant groups, as Fisher's exact test results in a p -value of 0.090 for ungrouped and 0.750 for grouped values. Indeed, all participant groups show a high frequency of the corpus category, although L1 experts and L2 speakers are markedly higher with 70.3% and 85.3% and L1 non-experts produced various types of approximating categories to a higher degree.

Thus, it has been shown that *of*-NPs of Category CB are frequently recognised as a distinct category by all three participant groups, but that this categorisation is largely based on lexical sorting strategies rather than a constructional one. Furthermore, it has been shown that the two variables are not significantly dependent on the three participant groups, but that there is a tendency for L1 experts and L2 speakers to identify the corpus category more often than L1 non-experts do.

6.2.2.5 The categorisation of type 1.3: A bit of an eyeful

The third type of *of*-NP in Task 2 of the online experiment corresponds to the *of*-NP category CA6 (see Section 4.3.2.3) containing the four expressions *too much of a softie*, *a bit of an eyeful*, *a tad of a miss* and *something of a mystery*. This type of *of*-NP is characterised by its meaning relationship where CONEN1 QUANTIFIES AND GRADES CONEN2. As previously mentioned in Section 4.3.2.3 on this type of *of*-NP, however, much of the nature of these expressions was identified by the participants within the online experiment.

As Table 6-17 on page 200 above shows, a total of 156 participants provided non-deviating categories for this type of *of*-NP. Specifically, as is shown in Table 6-24, 92 participants provided the corpus category, while 64 participants also included other expressions such as *the prettiest of this troupe*, *some of the columns*, *the word of the day* or *the couple of the evening*. Across all of these different categories, however, 136 participants provided an explanation for their groupings which somehow related to these *of*-NPs' constructional nature. Only eight participants grouped these *of*-NPs together on a structural basis. Twelve participants either said they did not know why they put them together or their explanation was unclear.

Table 6-24: Participants' interpretation of *of*-NP category CA6

	Related definition	Structural	Does not know	Unclear	Total
Corpus categories	78	7	4	3	92
3 of same category	2	-	-	-	2
3 or 4 of same category + <i>the prettiest of this troupe</i>	21	-	2	1	24
3 of same category + <i>some of the columns</i>	15	-	-	-	15
3 of same category + <i>the word of the day</i> or <i>the couple of the evening</i>	4	-	-	-	4
Other approx. categories	16	1	1	1	19
Total	136	8	7	5	

The related definitions given by the 136 participants could not be split up into singular, separate sorting strategies, because many participants' definitions covered several different aspects of this type of *of*-NP's nature simultaneously. Consider examples (6-10) and (6-11):

- (6-10) For me these are more vernacular phrases which apply an amount to an object not accurately defined in volume and using a “descriptive noun/adjective” (participant 14)
- (6-11) The expressions are all ‘x of a y’, where x alludes to an amount/portion but in quite vague terms (participant 85)

In (6-10), the definition identifies the expressions as “vernacular phrases” which refers to their idiomatic nature—in fact, many other participants identified them as idioms specifically—and also points out that they express “an amount” which relates to the expressions' quantifying nature. Furthermore, it mentions that this quantification appears to be quite vague by calling it “not accurately defined in volume”. Finally, the expressions are also referred to as descriptive. Indeed, many participants identified these expressions as being used to describe a person or a thing. Moreover, while also identifying the expressions' vagueness, (6-11) specifically refers to the constructional nature of these *of*-NPs in that the first part of the expression (ConEn1) “alludes to an amount/portion” of the second part (ConEn2).

Table 6-25: Frequency count of the various related definitions for *of*-NP category CA6

	Related definition						Total of groupings with related definition
	Descriptive	Proportions of ConEn2	Measure/Quantity/Amount	Vagueness	Expressions (idioms/vernacular)	Subjective opinion	
Corpus category	25	9	24	19	28	7	78
3 of same category	-	-	-	1	1	-	2
3 or 4 of same category + <i>the prettiest of this troupe</i>	12	-	2	1	3	7	21
3 of same category + <i>some of the columns</i>	2	1	12	12	-	1	15
3 of same category + <i>the word of the day</i> or <i>the couple of the evening</i>	-	-	-	-	4	-	4
Other approx. categories	5	3	6	7	-	1	16
Total	44	13	44	40	36	16	

How these various aspects of the 136 participants' related definitions spread across the individual category types is shown in Table 6-25. Note that the numbers in the bottom row of the table add up to more than 136, which is due to the fact that many of the participants' definitions ticked more than one of the boxes.

The six features of these expressions which have most prominently been mentioned by the 136 participants are the following:

1. They are used to describe a person or thing, often in relational sentences such as *she is a bit of an eyeful*.
2. They express a proportion of the entity after *of*.
3. They express a quantity.
4. The quantity is expressed in vague terms.
5. They are idiomatic.
6. They express a subjective opinion.

All of these features were also identified with each of the 78 corpus categories, thereby defining the nature of these expressions. Some of the features were, however, also found in other expressions. Table 6-25 illustrates that the approximating categories including *the prettiest of this troupe* were most often identified as 'describing

something’ or ‘expressing a subjective opinion’. These two features do, indeed, fit with this additional *of*-NP, since the superlative *the prettiest* subjectively identifies someone’s beauty. In fact, the expression could be used in a relational clause such as *she is the prettiest of this troupe*. Furthermore, most participants who included *some of the columns* in their category identified the expressions’ quantifying and vague nature, which relates to the nature of the quantifier *some*. Finally, participants who put either *the word of the day* or *the couple of the evening* in this category did so on the basis of their idiomatic nature as quite fixed phrases.

Hence, while some participants did indeed identify the constructional meaning of this type of *of*-NP, many other participants grouped them together based on other characteristics: lexical ones (quantity, vagueness) or syntactic ones (i.e. their frequent grammatical function as attributes in relational sentences). That participants intuitively knew which kind of grammatical environment these expressions occurred in, enforces the fact that they belong to the same *of*-NP category. This sheds light on another aspect of the nature of *of*-NPs, which has not been considered in detail within this study, namely their grammatical environment, and their grammatical function within a clause. Further research would be necessary to explore this in more detail. As is shown by this particular type of *of*-NP, not only do the various *of*-NP categories share a meaning relationship between ConEn1 and ConEn2, but they can also frequently appear in the same grammatical environment with a shared grammatical function.

Table 6-26: The categorisation strategies across the three participant groups for *of*-NP category
CA6

<u>Significance—ungrouped (grouped)</u> Expected cell count <5—73.3% (58.3%) Chi Square Test—0.233 (0.173) Fisher’s Exact Test—0.170 (0.157)		L1 Non-Experts		L1 Experts		L2 Speakers		Total
		Freq	%	Freq	%	Freq	%	
Related	Related definition	83	80.6	31	83.8	22	64.7	136
Structural	Structural	2	1.9	2	5.4	4	11.8	8
Invalid	Does not know	3	2.9	2	5.4	2	5.9	7
	Unclear	3	2.9	-	0.0	2	5.9	5
Deviating	Deviating categories	12	11.7	2	5.4	4	11.8	18
Total		103	100.0	37	100.0	34	100.0	

Table 6-27: The category types across the three participant groups for *of*-NP category CA6

Significance—ungrouped (grouped) <i>Expected cell count < 5—61.9% (22.2%)</i> <i>Chi Square Test—0.891 (0.598)</i> <i>Fisher's Exact Test—0.954 (0.630)</i>		L1 Non-Experts		L1 Experts		L2 Speakers		Total
		Freq	%	Freq	%	Freq	%	
Corpus	Corpus categories	50	48.5	23	62.2	19	55.9	92
Approximating	3 of same category	2	1.9	-	0.0	-	0.0	2
	3 or 4 of same category + <i>the prettiest of this troupe</i>	16	15.5	5	13.5	3	8.8	24
	3 of same category + <i>some of the columns</i>	10	9.7	3	8.1	2	5.9	15
	3 of same category + <i>the word of the day or</i> <i>the couple of the evening</i>	3	2.9	-	0.0	1	2.9	4
	Other approx. categories	10	9.7	4	10.8	5	14.7	19
Deviating	Deviating categories	12	11.7	2	5.4	4	11.8	18
Total		103	100.0	37	100.0	34	100.0	

Finally, the distribution of categorisation strategies and category types across the three participant groups, as presented in Table 6-22 and Table 6-23 respectively, shows an equal spread of both variables across the three groups, although the group of L1 experts yet again yielded a higher frequency of corpus categories and sorting strategies of a related definition. In turn, they also produced a lower frequency of deviating categories. However, the significance tests show that neither of the two tables is statistically significant. The Fisher's exact test's *p*-values for the various sorting strategies in Table 6-22 are 0.170 (0.157), while the ones for the different category types in Table 6-23 are 0.954 (0.630). Thus, the interpretation of *of*-NPs of Category CA6 has been shown to be independent of the three participant groups, despite a tendency of L1 experts to recognise the corpus category more often.

6.2.2.6 The categorisation of type 1.4: One of their airports

The fourth and last set of expressions in Task 2 contained *of*-NPs of Category EA (see Section 4.3.2.5) including the expressions *one of their airports*, *the prettiest of this troupe*, *most of these symptoms* and *some of the columns* where CONEN3 IS A SUBSET OF CONEN2. As Table 6-17 on page 200 indicates, of the four corpus categories involved in Task 2, the participants' solutions for expressions of this category diverged from the corpus category the most. Only 55 participants recreated the corpus category,

while 67 participants created approximating categories and 52 participants created deviating ones.

As is shown in Table 6-28, next to the 55 corpus categories, a further sixteen participants created an approximating category that only contained three of the expressions with *the prettiest of this troupe* missing. In addition, seven participants only put *most of these symptoms* and *some of the columns* with no other expressions into the category. Interestingly, the reason why, in all of these instances, *one of their airports* and/or *the prettiest of this troupe* are missing from the category is because they have either been put with *of*-NP category I or CB for reasons explained in Sections 6.2.2.3 and 6.2.2.4 above. One further popular type of approximating category that was created by 24 participants contained three of the expressions with an additional member from *of*-NP category CA6. The remaining twenty participants created other types of approximating categories.

Table 6-28: Participants' interpretation of *of*-NP category EA

	Selection (constructional)	Vague quantity (lexical)	Quantity (lexical)	Structural	Does not know	Unclear	Total
Corpus category	28	-	9	3	10	5	55
3 of same category	9	4	1	-	1	1	16
<i>most of these symptoms + some of the columns</i>	1	4	1	-	-	1	7
3 of same category + <i>something of a mystery or a tad of a miss or a bit of an eyeful or too much of a softie</i>	2	10	4	-	7	1	24
Other approximating categories	5	8	1	1	1	4	20
Total	45	26	16	4	19	12	

When asked to explain the shared meaning of these expressions, 45 participants identified the constructional meaning of selection where ConEn1 identifies a subset of the group in ConEn2. 38 of these participants created categories that contained relevant *of*-NPs only. 42 participants mentioned quantity as the criterion for their categories with 26 of them specifying that the quantity was vague. Note that of these 26 participants, none had recreated the corpus category since *the prettiest of this troupe* would not have fit in with this sorting strategy (although *one of their airports* does not

fit in either). Furthermore, the notions of quantity, vagueness and partiality that have been recognised by the participants in this type of *of*-NP (vagueness applies to the quantifiers *some* and *most* only) can also be found in the *of*-NPs of Category CA6, which explains why 24 participants included these expressions in other approximating categories. Furthermore, only four participants created categories on a structural basis. Nineteen participants indicated they did not know what the shared feature of their category was, while twelve participants' description was unclear.

Examining the distribution of these results across the three participant groups yields similar results to the other three types of *of*-NPs. As illustrated by Table 6-29 and Table 6-30, the distribution of categorisation strategies and category types is roughly equal across the three participant groups. Indeed, there is an almost equal percentage of L1 non-experts, L1 experts and L2 speakers who recreated the corpus category, who created deviating categories, and who identified the constructional meaning of selection of these *of*-NPs. Yet, as was the case with the other three *of*-NPs so far, the L1 non-expert and L2 speaker groups both show a slightly higher frequency of the corpus category. This difference is, however, again shown to be insignificant. Indeed, with *p*-values of 0.574 (0.883) and 0.583 (0.369)⁹⁵ respectively, Fisher's exact test shows the variables to be independent of one another in both Table 6-29 and Table 6-30.

⁹⁵ Note that for the *p*-values of the grouped values in both Table 6-29 and Table 6-30, the chi-square test was used instead of Fisher's exact test, because for this distribution the cells with expected values below 5 did not exceed 20.0% (see Field 2009: 690).

Table 6-29: The categorisation strategies across the three participant groups for *of*-NP category

EA

Significance—ungrouped (grouped) <i>Expected cell count <5—42.9% (20.0%)</i> <i>Chi Square Test—0.560 (0.883)</i> <i>Fisher's Exact Test—0.574 (0.856)</i>		L1 Non-Experts		L1 Experts		L2 Speakers		Total
		Freq	%	Freq	%	Freq	%	
Constructional	Selection	27	26.2	9	24.3	9	26.5	45
Lexical	Vague quantity	17	16.5	6	16.2	3	8.8	26
	Quantity	7	6.8	3	8.1	6	17.6	16
Structural	Structural	1	1.0	2	5.4	1	2.9	4
Invalid	Does not know	10	9.7	3	8.1	6	17.6	19
	Unclear	9	8.7	2	5.4	1	2.9	12
Deviating	Deviating categories	32	31.1	12	32.4	8	23.5	52
Total		103	100.0	37	100.0	34	100.0	

Table 6-30: The category types across the three participant groups for *of*-NP category EA

Significance—ungrouped (grouped) <i>Expected cell count <5—44.4% (0.0%)</i> <i>Chi Square Test—0.530 (0.369)</i> <i>Fisher's Exact Test—0.583 (0.369)</i>		L1 Non-Experts		L1 Experts		L2 Speakers		Total
		Freq	%	Freq	%	Freq	%	
Corpus	Corpus category	27	26.2	14	37.8	14	41.2	55
Approximating	3 of same category	8	7.8	5	13.5	3	8.8	16
	<i>most of these symptoms + some of the columns</i>	6	5.8	1	2.7	-	0.0	7
	<i>3 of same category + something of a mystery or a tad of a miss or a bit of an eyeful or too much of a softie</i>	16	15.5	3	8.1	5	14.7	24
	Other approx. categories	14	13.6	2	5.4	4	11.8	20
Deviating	Deviating categories	32	31.1	12	32.4	8	23.5	52
Total		103	100.0	37	100.0	34	100.0	

Hence, even though the participants diverged more from the corpus category with this type of *of*-NP than with the previous three, 55 of them still recreated the corpus category. Moreover, many of the participants also identified the constructional

meaning, thereby affirming the researcher's categorisation of these expressions into one group of *of*-NPs.

6.2.2.7 The categorisation of type 2.1: The provision of pensions

The first type of *of*-NP that was part of the online experiment's Task 3 is representative of *of*-NP category DA (see Section 4.3.2.4) containing the expressions *the provision of pensions*, *the analysis of the Oedipus myth*, *the loss of jobs* and *the scrapping of car tax*. These *of*-NPs feature the constructional meaning relationship where CONEN2 IS PASSIVELY ENGAGED IN CONEN1. As Table 6-17 on page 200 illustrates, for this type of *of*-NP most participants created approximating categories with a frequency of 111. Only 37 participants recreated the corpus category, while 26 participants created deviating categories. Table 6-31 below shows the various category types with the participants' sorting strategies for them.

Table 6-31: Participants' interpretation of *of*-NP category DA

	Constructional	Nominalisations (lexical)	Economy/Government /Society (lexical)	Giving and taking (lexical)	Structural	Does not know	Unclear	Total
Corpus category	10	26	-	-	-	-	1	37
3 of same category	1	-	2	2	-	1	-	6
4 of same category + <i>the generosity of the crown</i>	1	3	-	-	-	-	-	4
3 of same category (minus <i>the analysis</i>) + <i>the generosity of the crown</i>	-	7	24	5	-	6	2	44
3 of same category (minus <i>the analysis</i>) + <i>the value of the crop</i>	-	1	13	1	-	3	4	22
3 of same category (minus <i>the analysis</i>) + <i>the concept of accountability</i>	-	-	7	-	-	2	1	10
Other approx. categories	1	4	11	1	1	3	4	25
Total	13	41	57	9	1	15	12	

As can be seen, only thirteen participants mentioned the specific constructional meaning of the researcher's solution. See (6-12) and (6-13) as examples of two such descriptions:

- (6-12) 1st noun is a nominalised verb defining the action of which the 2nd noun is the object (participant 22)
- (6-13) This is a way of making a noun phrase to describe an action. The first noun refers to the action that is done, the second noun is the thing that that action is about (participant 107)

More often than identifying this constructional meaning, 41 participants identified just the verbal part in the expressions, many also referring to the fact that they are nominalisations. Interestingly, the expression *the generosity of the crown* was sometimes included in these where *generosity* was interpreted as a process of *being generous*. This explanation of the categorisation was not taken to be constructional, but rather lexical. However, it is worth considering that some of these participants might still have recognised the constructional meaning of the expressions. They might have recognised the verbal elements as constituting a process that ConEn2 is involved in, but might not have chosen to state this explicitly in their descriptions.

More strikingly, however, next to these category types and categorisation strategies related to the corpus category, the largest portion of participants provided another solution to the *of*-NPs of this type. Indeed, 57 participants grouped the expressions together by a different lexical criterion. The *of*-NPs *the provision of pensions*, *the loss of jobs*, *the scrapping of car tax*, *the generosity of the crown*, *the value of the crop* and *the concept of accountability* have all been associated with the semantic fields of economy, politics and/or society. A further nine participants identified a shared meaning of ‘giving and taking’. Hence, these *of*-NPs were often grouped together due to shared semantic fields rather than shared constructional meaning. This illustrates how difficult it is to eliminate any lexical similarities between the individual *of*-NPs that then trigger such lexical groupings, particularly when the expressions have been taken from real language data, as was the case for this experiment (see Section 6.1.2.1). Due to this semantic interference, participants were provided with another sorting option based on lexical meaning and semantic fields, which explains the lower frequency of participants who identified the constructional meaning of these *of*-NPs.

Analysing these results across the three participant groups yields the following results.

Table 6-32: The categorisation strategies across the three participant groups for *of*-NP category

DA

<i>Significance—ungrouped (grouped)</i> <i>Expected cell count < 5—45.8% (33.3%)</i> <i>Chi Square Test—0.062 (0.024)</i> <i>Fisher's Exact Test—missing (0.018)</i> <i>Monte Carlo Estimate—0.052</i>		L1 Non-Experts		L1 Experts		L2 Speakers		Total
		Freq	%	Freq	%	Freq	%	
Constructional	Constructional	4	3.9	6	16.2	3	8.8	13
Lexical / Semantic Fields	Nominalisations	22	21.4	12	32.4	7	20.6	41
	Economy/Government/Society	41	39.8	9	24.3	7	20.6	57
	Giving and taking	7	6.8	2	5.4	-	0.0	9
Structural	Structural	1	1.0	-	0.0	-	0.0	1
Invalid	Does not know	8	7.8	1	2.7	6	17.6	15
	Unclear	5	4.9	2	5.4	5	14.7	12
Deviating	Deviating categories	15	14.6	5	13.5	6	17.6	26
Total		103	100.0	37	100.0	34	100.0	

So far, with the four corpus categories of Task 2, no significant difference was found in the three participant groups' creation of category types and their categorisation strategies. Table 6-32, however, shows that for *of*-NPs of Category DA in Task 3 the various categorisation strategies are spread differently across the three participant groups. In the group of L1 experts, there is a considerably higher percentage of participants who identified the constructional meaning of these *of*-NPs than in the other two groups—16.2% of L1 experts identified the constructional meaning whereas only 3.9% of L1 non-experts did the same. Moreover, L1 experts were also more prone to identify that these expressions contained verbal elements or nominalisations—32.4% of L1 experts did so as opposed to just above 20% in the other two groups. Furthermore, this behaviour is reversed when looking at the lexical categorisation strategy of economy, government and society. With a percentage of 39.8%, this strategy appears far more often in the group of L1 non-experts than in the other two groups (24.3% and 20.6%). The group of L2 speakers features a far higher percentage of participants who either did not know how to describe these expressions or whose explanations were unclear. Finally, this unequal spread of categorisation strategies across the three participant groups indeed proves to be significant. Fisher's exact test,

using the Monte Carlo estimate,⁹⁶ yields a *p*-value of 0.052, which is just above the significance level of 0.050. However, when examining the correlation between these two variables with the grouped values of Table 6-32, Fisher's exact test yields a *p*-value of 0.018. Hence, the categorisation strategies used for Category DA are shown to be more significantly dependent on the three participant groups when examined on the basis of less delicate types of categorisation strategies. In other words, there is a significant difference in how the three participant groups interpret Category DA either on a constructional, lexical/semantic field, or structural basis. Hence, this means that expert linguistic knowledge (i.e. group membership in one of the three participant groups) has a significant effect on the way participants interpret the expressions related to corpus category DA. Indeed, L1 experts tend to identify the constructional meaning or the verbal aspect of the *of*-NPs in question to a greater degree, while L1 non-experts are more inclined to interpret them based on shared semantic fields such as economy, government or society.

Table 6-33, on the other hand, also shows differences in the various category types across the three participant groups, but Fisher's exact test shows them to be insignificant with a *p*-value of 0.202 for ungrouped values and 0.144 for grouped ones.⁹⁷ Even so, Table 6-33 shows that, with 35.1%, L1 experts reproduced the corpus category to the highest degree, while L1 non-experts have included *the generosity of the crown* in an approximating category more often than the other two groups—i.e. 30.1% as opposed to 16.2% in the L1 experts group. Furthermore, the L1 non-experts also created more additional approximating categories (18.4%) than the other two groups. Going back to Table 6-31 above, we can see that these two types of approximating categories were associated with economy, government and society most of the time.

⁹⁶ SPSS proved unable to calculate Fisher's exact test for this latter crosstabulation due to insufficient memory. In such cases, it is necessary to use the Monte Carlo estimate of Fisher's exact test (see Mehta & Patel 2012: 213).

⁹⁷ As above, the former of these two *p*-values was calculated with the Monte Carlo estimate of Fisher's exact test, due to SPSS' difficulty calculating Fisher's exact test with insufficient memory (see Mehta & Patel 2012: 213).

Table 6-33: The category types across the three participant groups for *of*-NP category DA

Significance—ungrouped (grouped) <i>Expected cell count <5—45.8% (0.0%)</i> <i>Chi Square Test—0.214 (0.142)</i> <i>Fisher's Exact Test—missing (0.144)</i> <i>Monte Carlo Estimate—0.202</i>		L1 Non-Experts		L1 Experts		L2 Speakers		Total
		Freq	%	Freq	%	Freq	%	
Corpus	Corpus category	16	15.5	13	35.1	8	23.5	37
Approximating	3 of same category	3	2.9	3	8.1	-	0.0	6
	4 of same category + <i>the generosity of the crown</i>	1	1.0	1	2.7	2	5.9	4
	3 of same category (minus <i>the analysis</i>) + <i>the generosity of the crown</i>	31	30.1	6	16.2	7	20.6	44
	3 of same category (minus <i>the analysis</i>) + <i>the value of the crop</i>	13	12.6	4	10.8	5	14.7	22
	3 of same category (minus <i>the analysis</i>) + <i>the concept of accountability</i>	5	4.9	2	5.4	3	8.8	10
	Other approx. categories	19	18.4	3	8.1	3	8.8	25
Deviating	Deviating categories	15	14.6	5	13.5	6	17.6	26
Total		103	100.0	37	100.0	34	100.0	

Hence, even though the distribution of answers in Table 6-33 is not statistically significant, it still illustrates how L1 non-expert participants have a stronger tendency towards a non-constructional, lexical interpretation of these *of*-NPs, whereas L1 experts detect the constructional and verbal meaning to a higher degree.

6.2.2.8 The categorisation of type 2.2: The size of the record

The second type of *of*-NP within Task 3 is made up of expressions from *of*-NP category AA (see Section 4.3.2.1) including *the size of the record*, *the generosity of the crown*, *the content of the book* and *the value of the crop*. The constructional meaning relationship in these expressions is that CONEN1 IS A FEATURE OF CONEN2. As illustrated by Table 6-17 on page 200 above, over all eight categories, the corpus category of this *of*-NP type was recreated the least often. Indeed, a total of 99 participants (i.e. 56.9%) created deviating categories, 46 participants came up with approximating categories, while only 29 recreated the corpus category. The categorisation strategies of the 99 participants who created deviating categories with these *of*-NPs are discussed in more detail in Section 6.2.2.11 below. In the following, we shall only consider the corpus and approximating categories of the other 75 participants.

As mentioned above, the number of participants recreating the corpus category was very low for this type of *of*-NP. However, as is shown in Table 6-34 below, most of the 29 participants who did recreate the corpus category did so by identifying the relevant constructional meaning, which marks this meaning as an inherent feature of this type of *of*-NP. Six participants also included *the analysis of the Oedipus myth* for this interpretation.

Table 6-34: Participants' interpretation of *of*-NP category AA

	Aspect of ConEn2 (constructional)	Measure (lexical)	Structural	Does not know	Unclear	Total
Corpus category	24	2	-	1	2	29
3 of same category	2	3	-	-	-	5
3 of same category + <i>the analysis of the Oedipus myth</i>	6	-	-	4	-	10
3 of same category + <i>the loss of jobs</i>	1	5	-	1	-	7
3 of same category + <i>the provision of pensions</i>	1	3	-	-	-	4
Other approx. categories	6	4	3	2	5	20
Total	40	17	3	8	7	

A further popular interpretation of these expressions was the lexical interpretation of ConEn1 as a measure of some sort. This is particularly the case for the expressions *size*, *content* and *value* and was also extended to the ConEn1s *loss* and *provision*, which would refer to a decrease or increase of the respective ConEn2's measure.

Hence, even though this type of *of*-NP yielded categories that matched the researcher's solution the least, there were still 29 participants who did put the four relevant expressions into the same category and a total of 40 participants recognised the constructional meaning relationship between ConEn1 and ConEn2. This still confirms the existence of these *of*-NPs as their own distinct corpus category. The remaining 99 participants simply chose other features to sort the expressions by, as we shall see in Section 6.2.2.11 below.

Analysing these responses across the three participant groups shows that there is a considerable difference in the distribution of both the participants' categorisation strategies as well as the different category types. As can be seen in both Table 6-35

and Table 6-36, this difference in distribution is mainly due to the different percentage of deviating categories across the three participant groups. Indeed, in the group of L1 non-experts, a total of 67% of participants created deviating categories, while L1 experts only created 37.8% of such categories and L2 speakers 47.1%. Thus, L1 experts and L2 speakers were much more likely to recreate the corpus category and to identify the expressions' constructional meaning.

Table 6-35: The categorisation strategies across the three participant groups for *of*-NP category

AA

<u>Significance—ungrouped (grouped)</u> <i>Expected cell count <5—61.1% (46.7%)</i> <i>Chi Square Test—0.036 (0.023)</i> <i>Fisher's Exact Test—0.021 (0.017)</i>		L1 Non-Experts		L1 Experts		L2 Speakers		Total
		Freq	%	Freq	%	Freq	%	
Constructional	Aspect of ConEn2	16	15.5	11	29.7	13	38.2	40
Lexical	Measure	8	7.8	6	16.2	3	8.8	17
Structural	Structural	1	1.0	2	5.4	-	0.0	3
Invalid	Does not know	4	3.9	2	5.4	2	5.9	8
	Unclear	5	4.9	2	5.4	-	0.0	7
Deviating	Deviating categories	69	67.0	14	37.8	16	47.1	99
Total		103	100.0	37	100.0	34	100.0	

Table 6-36: The category types across the three participant groups for *of*-NP category AA

<u>Significance—ungrouped (grouped)</u> <i>Expected cell count <5—46.7% (0.0%)</i> <i>Chi Square Test—0.039 (0.006)</i> <i>Fisher's Exact Test—0.023 (0.006)</i>		L1 Non-Experts		L1 Experts		L2 Speakers		Total
		Freq	%	Freq	%	Freq	%	
Corpus	Corpus category	10	9.7	12	32.4	7	20.6	29
Approximating	3 of same category	2	1.9	2	5.4	1	2.9	5
	3 of same category + <i>the analysis of the Oedipus myth or the loss of jobs or the provision of pensions</i>	12	11.7	5	13.5	4	11.8	21
	Other approx. categories	10	9.7	4	10.8	6	17.6	20
Deviating	Deviating categories	69	67.0	14	37.8	16	47.1	99
Total		103	100.0	37	100.0	34	100.0	

In addition, both tables also show that L1 non-experts were much less likely to recreate the corpus category and to identify the constructional meaning of these *of*-NPs. Furthermore, if we examine the statistical significance of the distribution of these two variables, we can see that they are indeed both significantly dependent on the three participant groups. In Table 6-35, Fisher's exact test identifies the categorisation strategies for Category AA to be significantly dependent on the three participant groups with a *p*-value of 0.021 (0.017). Similarly, the *p*-values of 0.023 and 0.006 in Table 6-36 also show a significant dependency between the three participant groups and the different category types.

Thus, it has been shown that expert linguistic knowledge does have an effect on the interpretation of *of*-NPs of the Category AA. Indeed, L1 experts and L2 speakers—who are both thought to have a more analytical understanding of the English language—sort them more based on shared constructional meaning rather than shared lexical meaning, whereas L1 non-experts have chosen other categorisation strategies with the deviating categories presented in Section 6.2.2.11 below.

6.2.2.9 The categorisation of type 2.3: The kingdom of Castile

The third type of *of*-NP in Task 3 is of Category FA (see Section 4.3.2.6) where CONEN2 IS CONEN1 INHERENTLY. The expressions of this type used for the online experiment are *the kingdom of Castile*, *the concept of accountability*, *the village of Lockington* and *the discipline of hermeneutics*. As illustrated by Table 6-17 on page 200, the participants' categories for this type of *of*-NP also yielded considerably fewer corpus categories than the others. Indeed, the corpus category was recreated by only 36 participants. Instead, a total of 98 participants created deviating categories, and 40 participants created approximating categories.

Table 6-37 shows the various categorisation strategies of the 76 participants who created corpus or approximating categories with this type of *of*-NP.

Table 6-37: Participants' interpretation of *of*-NP category FA

	ConEn2 is ConEn1 (constructional)	ConEn2 specifies ConEn1 (constructional)	Labels/concepts (lexical)	Historical/studies (lexical)	Studies (lexical)	Structural	Does not know	Unclear	Total
Corpus category	11	15	5	-	-	2	2	1	36
3 of same category	-	1	-	-	-	-	1	-	2
4 of same category + <i>the analysis of the Oedipus myth</i>	-	-	1	-	-	-	1	1	3
3 of same category + <i>the analysis of the Oedipus myth</i>	4	1	2	2	1	-	3	3	15
Other approx. categories	2	3	4	2	-	-	5	4	20
Total	17	20	12	4	1	2	12	9	

As illustrated by Table 6-37, 37 of the participants gave a constructional explanation as definition for their category. Interestingly, however, two different interpretations occurred. Seventeen participants formulated the researcher's viewpoint on these expressions and stated that ConEn1 expressed what ConEn2 *was*—e.g. that *the kingdom of Castile* indicated that Castile *was* a kingdom. Consider the three examples in (6-14) to (6-16) of explanations from three participants.

- (6-14) describing a specific, named thing (participant 11)
- (6-15) The expressions all refer to what the thing in question is (eg: Lockington is a village, Castile is a kingdom) (participant 101)
- (6-16) A very specific item, also stating or clarifying a class to which it belongs (participant 158)

The other twenty participants, however, chose an opposite explanation. They mentioned that ConEn2 gave more specific information on ConEn1 rather than the other way around. In this sense, ConEn2 is seen as giving an example or being a subpart of ConEn1. See (6-17) to (6-19) for examples of such definitions:

- (6-17) 2nd noun is subpart of a set defined by 1st noun (participant 22)
- (6-18) Specifying one thing out of many possible vbillages [sic!] / disciplines
etc. (participant 46)
- (6-19) the [category example belongs to] of [example] (participant 122, square
brackets in original)

Albeit from two different directions, these two explanations arrive at the same interpretation of this type of *of*-NP. Either way, ConEn2 is still seen as *being identified as* ConEn1. Next to the four essential *of*-NPs the one expression that was put into this same category most often was *the analysis of the Oedipus myth*, where the Oedipus myth would have been interpreted as *being* an analysis. Next to these constructional interpretations, there were also a few lexical ones. The most frequent one—with twelve participants—interpreted the entities as fixed labels or concepts with names. This interpretation also aligns with *the analysis of the Oedipus myth* where *the Oedipus myth* constitutes the name of a Greek tale. Other interpretations—neither of which occurred with the corpus category—identified lexical fields which other expressions also fit into. For example, three participants identified a lexical field to do with history, including the additional expressions of either *the analysis of the Oedipus myth*, *the generosity of the crown* or *the value of the crop* (in the last case, participant 152 described them as “medieval or feudal”). In addition, participant 74 identified *the concept of accountability*, *the village of Lockington*, *the discipline of hermeneutics* and *the analysis of the Oedipus myth* as being representatives of “[s]ubjects you might study”. While these two lexical fields are quite rare within these approximating categories, they do appear more frequently in the categorisation strategies within the deviating categories, as we shall see in Section 6.2.2.11 below which discusses such alternative categorisation strategies. In sum, even though many participants opted for a different interpretation of this type of *of*-NP, based more on lexical rather than constructional criteria, there were still 37 participants who did identify the constructional meaning, 26 of whom also recreated the corpus category.

If we examine how these participants are distributed across the three participant groups, it becomes clear that, like the first two *of*-NP types in Task 3, this type is also distributed differently across the three groups. Again, as is shown in both Table 6-38 and Table 6-39, the highest percentage of deviating categories is found in the group of L1 non-experts with 67%, as opposed to 35.1% and 47.1% in the other two groups. In

terms of categorisation strategies (see Table 6-38), the groups of L1 experts and L2 speakers identified the expressions' constructional meaning to a far higher degree than L1 non-experts. Moreover, they also recreated the corpus category more frequently (see Table 6-39). The distribution of both of these variables across the three participant groups is again significant with Fisher's exact test's *p*-values of 0.003 (0.018) for the former and 0.011 (0.002) for the latter.

Table 6-38: The categorisation strategies across the three participant groups for *of*-NP category

FA

<u>Significance—ungrouped (grouped)</u> <i>Expected cell count <5—50.0% (46.7%)</i> <i>Chi Square Test—0.008 (0.041)</i> <i>Fisher's Exact Test—0.003 (0.018)</i>		L1 Non-Experts		L1 Experts		L2 Speakers		Total
		Freq	%	Freq	%	Freq	%	
Constructional	Constructional	14	13.6	12	32.4	11	32.4	37
Lexical	Lexical	9	8.7	5	13.5	2	5.9	16
Structural	Structural	1	1.0	1	2.7	-	0.0	2
Invalid	Does not know	4	3.9	6	16.2	2	5.9	12
	Unclear	6	5.8	-	0.0	3	8.8	9
Deviating	Deviating categories	69	67.0	13	35.1	16	47.1	98
Total		103	100.0	37	100.0	34	100.0	

Table 6-39: The category types across the three participant groups for *of*-NP category FA

<u>Significance—ungrouped (grouped)</u> <i>Expected cell count <5—46.7% (0.0%)</i> <i>Chi Square Test—0.024 (0.002)</i> <i>Fisher's Exact Test—0.011 (0.002)</i>		L1 Non-Experts		L1 Experts		L2 Speakers		Total
		Freq	%	Freq	%	Freq	%	
Corpus	Corpus category	13	12.6	11	29.7	12	35.3	36
Approximating	3 of same category	1	1.0	1	2.7	-	0.0	2
	3 or 4 of same category + <i>the analysis of the Oedipus myth</i>	10	9.7	5	13.5	3	8.8	18
	Other approx. categories	10	9.7	7	18.9	3	8.8	20
Deviating	Deviating categories	69	67.0	13	35.1	16	47.1	98
Total		103	100.0	37	100.0	34	100.0	

Thus, the interpretation of this third type of *of*-NP in Task 3 is also significantly dependent on the participants' level of linguistic knowledge. L1 experts and L2 speakers tended more towards a constructional analysis of the four *of*-NPs with an additional higher frequency of corpus categories. L1 non-experts, on the other hand, chose other categorisation strategies with deviating categories more often, which shall be analysed in more detail in Section 6.2.2.11 below.

6.2.2.10 The categorisation of type 2.4: The type of bread

The final type of *of*-NP included in Task 3 consisted of *of*-NPs of category H (see Section 4.3.2.8) including the expressions *the species of parrot*, *the type of bread*, *this form of skin cancer* and *the kind of document*. As Table 6-17 on page 200 illustrates, of the four types of *of*-NPs in Task 3, this type yielded the corpus category most often. Indeed, 94 participants recreated the corpus category, while 57 participants produced approximating categories and only 23 participants created deviating ones.

Table 6-40 shows an analysis of the various category types across participants' different categorisation strategies. It illustrates that a total of 79 of the 94 participants who recreated the corpus category identified the expressions' constructional meaning which makes reference to a specific type or subgroup of an entity. A further nineteen participants identified the same constructional meaning but within different approximating categories.

Table 6-40: Participants' interpretation of *of*-NP category H

	Type/kind categorisation (constructional)	Descriptive / Qualities	Structural	Other	Does not know	Unclear	Total
Corpus category	79	6	-	3	2	4	94
3 of same category	1	-	-	-	-	-	1
3 or 4 of same category + 1 to 3 of category AA e.g. <i>the size of the record</i>	10	12	1	5	4	8	40
3 or 4 of same category + 1 to 3 of category FA e.g. <i>the kingdom of Castile</i>	8	2	-	1	1	1	13
Other approx. categories	-	-	-	-	1	2	3
Total	98	20	1	9	8	15	

Furthermore, another twenty participants' explanations made reference to the expressions' descriptive or qualitative nature. This latter type of sorting strategy, however, mostly occurred with approximating categories, namely as part of 40 participants' approximating categories which always also included a number of *of*-NPs from Category AA such as *the size of the record*. The descriptive or qualitative nature of the expressions would thus be captured more by this second type of *of*-NP rather than the former. In another frequent type of approximating category—with a frequency of thirteen participants—expressions from *of*-NP category FA such as *the kingdom of Castile* were put together with the relevant *of*-NPs. In this case, most explanations made reference to the expressions' typicity. This is in line with participants' interpretation of, for example, *the kingdom of Castile* as ConEn2 denoting an example, i.e. a type, of ConEn1 (also see Section 6.2.2.9 above). Finally, nine participants offered other lexical categorisation strategies, one participant chose a structural approach, eight indicated they did not know, while fifteen remaining participants' sorting strategy was unclear.

Table 6-41: The categorisation strategies across the three participant groups for *of*-NP category

H

<i>Significance—ungrouped (grouped)</i> <i>Expected cell count <5—66.7% (46.7%)</i> <i>Chi Square Test—0.764 (0.555)</i> <i>Fisher's Exact Test—0.799 (0.560)</i>		L1 Non-Experts		L1 Experts		L2 Speakers		Total
		Freq	%	Freq	%	Freq	%	
Constructional	Type/kind categorisation	52	50.5	27	73.0	19	55.9	98
Lexical	Description / Qualities	13	12.6	2	5.4	5	14.7	20
	Other	6	5.8	1	2.7	2	5.9	9
Structural	Structural	1	1.0	-	0.0	-	0.0	1
Invalid	Does not know	6	5.8	-	0.0	2	5.9	8
	Unclear	10	9.7	3	8.1	2	5.9	15
Deviating	Deviating categories	15	14.6	4	10.8	4	11.8	23
Total		103	100.0	37	100.0	34	100.0	

When analysing these answers across the three participant groups, a similar picture emerges as with the previous three *of*-NP types of Task 3. Table 6-41 illustrates that the group of L1 experts identified the constructional meaning of typicity to a far greater degree than the other two groups—i.e. 73% as opposed to only 55.9% or 50.5%.

However, when looking at the results of Fisher's exact test, it becomes apparent that with a *p*-value of 0.799 (0.560) the distribution of the categorisation strategies across the three participant groups is not statistically significant for this type of *of*-NP.

Similarly, Table 6-42 shows that the group of L1 experts were also most likely to recreate the corpus category. A total of 67.6% of L1 experts did so, as opposed to only 55.9% of L2 speakers and 48.5% of L1 non-experts. Again, however, this distribution is not statistically significant with a *p*-value of 0.677 (0.406). Finally, it is nevertheless worth noting that in both Table 6-41 and Table 6-42 the deviating categories are most frequent in the group of L1 non-experts.

Table 6-42: The category types across the three participant groups for *of*-NP category H

<i>Significance—ungrouped (grouped)</i> <i>Expected cell count < 5—55.6% (22.2%)</i> <i>Chi Square Test—0.660 (0.386)</i> <i>Fisher's Exact Test—0.677 (0.406)</i>		L1 Non-Experts		L1 Experts		L2 Speakers		Total
		Freq	%	Freq	%	Freq	%	
Corpus	Corpus category	50	48.5	25	67.6	19	55.9	94
Approximating	3 of same category	1	1.0	-	0.0	-	0.0	1
	3 or 4 of same category + 1 to 3 of category AA <i>e.g. the size of the record</i>	25	24.3	5	13.5	10	29.4	40
	3 or 4 of same category + 1 to 3 of category FA <i>e.g. the kingdom of Castile</i>	10	9.7	2	5.4	1	2.9	13
	Other approx. categories	3	2.9	-	0.0	-	0.0	3
Deviating	Deviating categories	15	14.6	4	10.8	4	11.8	23
Total		103	100.0	37	100.0	34	100.0	

Hence, although not statistically significant, it has been shown that there is still a tendency for L1 experts to recreate the corpus category and to identify the constructional meaning of this type of *of*-NP more often than the other two participant groups. However, it is also important to note that despite this difference, within all groups it was still the majority of participants—close to or over 50% in all cases—who recreated the corpus category and/or identified the constructional meaning of the four expressions. This identifies this type of *of*-NP as a more salient category than the other three used in Task 3 and confirms the existence of the corpus category.

6.2.2.11 Deviating categories: Other, alternative categorisation strategies

Next to the corpus and approximating categories, the 174 participants also created deviating categories. These could not be associated with one of the eight corpus categories because they only contained one or two expressions of the same category and thus no majority. As shown by Table 6-14 on page 197 above, participants created such categories far more often in Task 3 than Task 2, with 246 tokens as opposed to 77. In addition, Table 6-15 on page 198 illustrates that Task 3 also yielded far more individual types of deviating categories. Task 2 only resulted in 51 deviating category types, whereas Task 3 had a total of 133. The following passages look at the various categorisation strategies which yielded these different category types in Task 2 and Task 3 respectively.

Table 6-43 below lists all the different categorisation strategies for the deviating categories in Task 2.

Table 6-43: Categorisation strategies in deviating categories of Task 2

Explanation	relates to	Freq	%
amount	Category CB and CA6	9	11.7
small amount		8	10.4
vague amount		10	13.0
fixed amount		2	2.6
big amount		5	6.5
superlative	Category I	12	15.6
description	Category CA6	8	10.4
subjective		1	1.3
attraction		2	2.6
idiomatic		1	1.3
selection	Category EA	4	5.2
airport	semantic fields	1	1.3
medical		1	1.3
political		1	1.3
some or something		1	1.3
doesn't know	-	10	13.0
unclear	-	1	1.3
Total	-	77	100.0

As Table 6-43 illustrates, the deviating categories in Task 2 are mostly reminiscent of the four corpus categories' semantic qualities. For instance, 34 of the 77 categorisation strategies (i.e. 43.2%) sort the expressions based on the fact that they contain an

indication of amount which is reminiscent of corpus categories CB and CA6 (see Sections 6.2.2.4 and 6.2.2.5 respectively). Indeed, some participants sorted these expressions by whether they contained a small or large amount. For example, participant 63 put the expressions *one of their airports*, *the prettiest of this troupe*, *a bit of an eyeful* and *a tad of a miss* together describing them as “[a] small quantity or amount of something”, while the expressions *most of these symptoms*, *some of the columns*, *too much of a softie* and *something of a mystery* were grouped together by the criterion of “[a] larger quantity or amount of something”. Furthermore, twelve categorisation strategies refer to the fact that some of the expressions are superlatives, which is a feature associated with the constructional meaning of the *of*-NPs in corpus category I (Section 6.2.2.3) as well as the lexical meaning of *the prettiest of this troupe*. Similarly, a further twelve categorisation strategies were either based on the expressions’ descriptive nature, their subjectivity, expression of attraction, or idiomaticity, which are features attributed to corpus category CA6 (see Section 6.2.2.5). In addition, four categorisation strategies identified the feature of selection typical to corpus category EA (Section 6.2.2.6). Thus, it becomes apparent that most participants who created deviating categories in Task 2 did so on the basis of features attributed to the task’s four corpus categories. In other words, they identified the same or similar semantic features as participants who recreated the corpus categories or who produced approximating categories, but did so by grouping the expressions differently. Indeed, only four category types are based on different categorisation strategies unrelated to the corpus categories. In fact, participant 12 created categories based on the three semantic fields “medical”, “political” and “airport” while participant 13 grouped *something of a mystery* and *some of the columns* together based on the criterion that they both began with “some/something”. With ten further categories, the participants indicated they did not know what the shared meaning was, and the description of one category was unclear. Hence, the descriptions for the deviating categories in Task 2 mainly relate to features associated with the respective corpus categories, with only two participants resorting to different and unrelated, lexical groupings.

Table 6-44: Categorisation strategies in deviating categories of Task 3

Explanation	relates to	Freq	%
academic/ideas/knowledge	lexis or semantic fields	41	16.7
abstract concepts		22	8.9
concrete concepts		12	4.9
places		17	6.9
specific		13	5.3
size		10	4.1
quantity		9	3.7
value		5	2.0
attribute	Category AA	11	4.5
economy/government	semantic fields	7	2.8
historical		7	2.8
describing		5	2.0
rural		4	1.6
urban		1	0.4
written materials		4	1.6
type	Category H	4	1.6
subtype		2	0.8
bad things	semantic fields	3	1.2
good things		3	1.2
opinion		2	0.8
idiom		1	0.4
monarchy		1	0.4
names	Category FA	1	0.4
formality	semantic fields	1	0.4
general terms		1	0.4
behaviours		1	0.4
reduction		1	0.4
social concepts		1	0.4
substance in containers		1	0.4
title		1	0.4
verbal	Category DA	1	0.4
personal	semantic fields	5	2.0
unclear	-	3	1.2
doesn't know	-	45	18.3
Total	-	77	100.0

If we compare these results to the deviating categories in Task 3, a different pattern occurs. Table 6-44 summarises the various categorisation strategies that participants came up with. In line with the deviating categories of Task 2, there are a few strategies

that are reminiscent of the four corpus categories of Task 3. For example, the categorisation strategy labelled “attribute” in Table 6-44 is reminiscent of corpus category AA (see Section 6.2.2.8), and the categorisation strategies of “type” and “subtype” relate to corpus category H (see Section 6.2.2.10). Furthermore, there is one mention of “verbal”, which relates to corpus category DA (see Section 6.2.2.7), and one strategy that recognised “names”, which is attributed to corpus category FA (see Section 6.2.2.9).

The majority of categorisation strategies within deviating categories of Task 3, however, were based on different, more lexically oriented approaches, or approaches based on shared semantic fields. The most common of these approaches, related the expressions *the concept of accountability*, *the discipline of hermeneutics*, *the analysis of the Oedipus myth* and *the content of the book* (sometimes also including *the generosity of the crown*) to the semantic field of academia and knowledge.

Another 22 participants identified the same set of expressions as “abstract concepts”, while the expressions *the kingdom of Castile*, *the village of Lockington*, *the content of the book*, *this species of parrot*, and others were identified as “concrete concepts”. The first two of these, i.e. *the kingdom of Castile* and *the village of Lockington*, were also labelled as “places” seventeen times.

Furthermore, seven deviating categories were also related to the semantic fields of economy and government, a categorisation strategy which already appeared 57 times within the approximating categories of corpus category DA (see Section 6.2.2.7), which thus makes it the overall most frequently chosen, semantic-field-based categorisation strategy. Finally, all other, less frequent categorisation strategies for deviating categories in Task 3 make reference to further semantic fields such as the rural or urban, good things or bad things, history, the monarchy, formality, and many more. Five categorisation strategies also referred to the respective participant’s personal judgments. For example, participant 24 created the categories “what you hope your Queen is interested in”, “What I’m not interested in”, “What the Queen is interested in”, and “What I’m interested in as a student of literature”. The explanations for three categorisation strategies were unclear, and a total of 45 participants indicated that they did not know what their categories’ defining shared semantic feature was.

Hence, as opposed to Task 2, the deviating categories in Task 3 were mostly based on shared semantic fields unrelated to the constructional meaning of the corpus categories. This tendency was already found partly in the approximating categories of

Task 3, mainly with corpus category DA and the semantic fields of economy, government and society.

6.3 Discussion and conclusion

In Section 6.2 above, the results for the eight corpus categories in Task 2 and Task 3 of the online experiment were presented individually, as well as a brief summary of the categorisation strategies found with deviating categories. In the following, these results are examined in broader terms. Specifically, this section looks at the difference between Task 2 and Task 3, analyses participants' sorting behaviour and the influence of expert linguistic knowledge on participants' interpretation of *of*-NPs (see Dąbrowska 2010), and, finally, discusses whether these findings have confirmed the existence of the corpus categories found within the corpus analysis in Chapter 4.

As discussed in Section 6.1.2.1 above, the two sorting tasks of the online experiment were based on different types of *of*-NPs. The expressions used for Task 2 were more idiosyncratic in nature. In other words, they only appeared very rarely in the corpus dataset of Chapter 4, or they had a very characteristic structural nature, which distinguished them from other, more typical *of*-NPs. As an example of the former, the *of*-NPs of corpus category I (see Section 4.3.2.9), including expressions such as *the word of the day*, only occurred twice in the whole corpus dataset (see Table 4-18 on page 119). At the same time, however, this *of*-NP type features the very particular constructional meaning of CONEN1 IS THE BEST IN CONEN2, which distinguishes them markedly from any other *of*-NPs. Secondly, the latter can be found in *of*-NP type EA, including expressions such as *one of their airports*, which differ from other *of*-NPs in that ConEn1 often consists of a pronominal element. Thus, the *of*-NPs in Task 2 were more idiosyncratic in nature, either due to frequency and semantics or due to structural features. Task 3, on the other hand, was built around *of*-NPs that are far more frequent within the corpus dataset and therefore less striking in their constructional meaning. As a result, it was anticipated that participants would recreate the corpus categories to a higher degree in Task 2 than Task 3, because the idiosyncrasy of the four corpus categories in Task 2 would make them more easily identifiable as separate categories. As shown in Table 6-14, Table 6-15 and Table 6-16 on pages 197 and 199 above, this hypothesis has indeed been confirmed. Not only did the participants recreate the corpus categories more often in Task 2 than in Task 3, but

they also identified the constructional meaning or a related meaning to a higher degree, as has become evident throughout Section 6.2.2. In Task 3, on the other hand, due to a lack of obvious, idiosyncratic differences between the four corpus categories, participants resorted more to other sorting strategies such as ones based on shared semantic fields (e.g. expressions relating to economy, society or politics) or based on personal judgements (e.g. things they liked or disliked). Whilst such sorting behaviour was indeed more frequent in Task 3, there was still always a portion of participants that did identify the four corpus categories and their respective constructional meanings (see Sections 6.2.2.7 to 6.2.2.10).

Furthermore, in response to Dąbrowska's (2010) discussion of the need for linguistic studies to not solely rely on the researcher's intuition, the results for each of the eight corpus categories were examined across the different participant groups of L1 non-experts, L1 experts, and L2 English speakers. It has been shown that there was no significant difference between the three groups' sorting behaviour with the idiosyncratic expressions in Task 2, neither in the different categories they created nor in the categorisation strategies they chose. On the other hand, it has been shown that there is a significant difference in how L1 non-experts, L1 experts, and L2 speakers categorised and interpreted the *of*-NPs of the corpus categories DA, AA and FA in Task 3. As discussed in Sections 6.2.2.7, 6.2.2.8 and 6.2.2.9 respectively, the group of L1 non-experts tended to recreate the corpus category to a lower degree than L1 experts. Moreover, they also did not identify the constructional meaning relationship between ConEn1 and ConEn2 as frequently as L1 experts. Instead, they tended to sort the expressions more based on shared semantic fields. The expressions of corpus category DA in particular were often associated with the fields of economics, society and politics (see Sections 6.2.2.7 and 6.2.2.11). Other frequent associations involved the fields of academia, studying, knowledge, history, and the concepts of abstractness and concreteness. Hence, it seems that the idiosyncrasy of the expressions in Task 2 facilitates the recreation of the corpus categories and the identification of the constructional meaning independent of the participants' expert linguistic knowledge. On the other hand, due to their structural similarity, the expressions of Task 3 required more analytical thinking and linguistic dissecting in order to identify the four different constructional meanings, which is represented by the difference in sorting behaviour between the three participant groups. Only corpus category H of Task 3 did not show any significant difference. Thus, Dąbrowska's (2010) observations that expert

knowledge will influence one's interpretation of a linguistic phenomenon, have indeed been confirmed and the same trend, albeit limited to just one of the tasks, was found within the online experiment.

What is more, according to the resulting categories, participants seem to adhere to a unidimensional sorting behaviour as discussed in Section 6.1.1 above. Overall, there were five different types of categorisation strategies (excluding the ones where participants indicated they simply did not know). There were structural approaches, constructional approaches, approaches based on shared semantic fields, approaches based on personal, purely objective judgements, as well as lexical approaches. An example for each of these approaches is given in the following. First, consider example (6-20) which shows a structural sorting behaviour.

- (6-20) the *x* of the *y*
 x of *y*
 x of a *y*
 x of the/this/these/their *y* (participant 156, Task 2)

Here, participant 156 identified similar sequences of determiners, the *of* element, as well as the elements *x* and *y*, on the basis of which they formed their categories. Hence, they grouped the sixteen expressions of Task 2 unidimensionally but by shared structural rather than semantic features. Participant 163, on the other hand, chose a different approach and went for the expressions' constructional meaning throughout. Their answers to Task 2 are given in (6-21).

- (6-21) singling out an object as the best in its category within a specified period
 of time
 numbers of items/things/measurements that are described as a 'measure
 of'
 adjective-like constructions used to denote quantities/degrees
 describing a part of a group (participant 163, Task 2)

Participant 163 recreated the four corpus categories of Task 2 and provided four unidimensional descriptions of their categories that suggest an understanding of the constructional meaning underlying the *of*-NPs: Each of the four descriptions identifies a feature of the constructional meaning relationship between ConEn1 and ConEn2.

Furthermore, other participants chose shared semantic fields to group the expressions together as is shown by participant 35's answers to Task 3 in (6-22).

- (6-22) Economy
monarchy
Academia
country side (participant 35, Task 3)

Participant 35—creating approximating and deviating categories—identified four broad semantic fields for the sixteen *of*-NPs, thus also demonstrating a unidimensional sorting behaviour. The fourth type of categorisation made use of similarly broad semantic fields, but based on personal opinion. Consider the example of participant 24's answers to Task 2 in (6-23).

- (6-23) What you hope your Queen is interested in.
What I'm not interested in.
What the Queen is interested in.
What I'm interested in as a student of literature. (participant 24, Task 2)

In this case, participant 24 chose their objective judgements as a way to group the *of*-NPs unidimensionally, referring to their personal interests and what they think the Queen might be interested in. In all of these four cases in (6-20) to (6-23), participants have portrayed a unidimensional sorting behaviour, choosing the same sorting dimension for each of the four categories in a task. While this behaviour is easily identified in the above examples, other participants' categorisation strategies were less straightforward, as they showcase a mixture of the four approaches shown above as well as the fifth, the lexical approach. Consider, for example, participant 110's answers to Task 2 in (6-24) and participant 114's answers to Task 3 in (6-25):

- (6-24) Time aspect (year, week, day etc.)
Numbers
Comparison
A subset (participant 110, Task 2)

In (6-24), participant 110 chose a lexical sorting strategy to form the first two categories. They identified the temporal aspect of the *of*-NPs *the word of the day*, *the goal of the year*, *the single of the week* and *the couple of the evening*, but did not pick

up on the constructional meaning of this type of expression. Similarly, they detected the numerical nature of ConEn2 in the expressions *a waiting list of three*, *a reduction of 41 percent*, *a clear majority of 58 seats* and *a span of ninety meters*, but did not indicate that this number gives us a quantity of ConEn1. In the other two categories, however, the participant chose different categorisation strategies. For the third one, which recreated corpus category CA6, they referred to the expressions as ‘comparisons’, which is taken to refer to these *of*-NPs’ descriptive nature, relating a person or thing to a graded feature such as *a bit of an eyeful*. Likewise, for the fourth category, they identified the expressions’ constructional nature of referring to a subset of ConEn2. Thus, participant 110 solved Task 2 by applying two lexical and two constructional sorting strategies. Participant 114, as given in (6-25), also took a mixed approach:

- (6-25) All of the phrases in this category feature the first noun indicating a verb that has been applied to the second noun.
All of the phrases in this category refer to a general body of knowledge that is identifiable but not really quantifiable.
All of the phrases in this category refer to entities that are quantifiable and concrete/fixed.
In all the phrases in this category, the first noun refers to a kind of classification system used to categorize the second noun. (participant 114, Task 3)

The first and fourth categories of participant 114’s answers to Task 3 both make reference to the expressions’ constructional meaning. The former identifies the fact that “the second noun” (i.e. ConEn2) is passively involved in the process of “a verb” (i.e. ConEn1). The latter refers to the typicity of the *of*-NPs involved, i.e. that ConEn1 identifies a type of the concept given in ConEn2. The second and third categories in (6-25) on the other hand, make use of semantic fields in order to group the expressions. The former groups the respective *of*-NPs together as ‘abstract concepts’, while the latter refers to ‘concrete concepts’. Hence, while some participants did only apply one type of categorisation strategy (i.e. either structural, constructional, related to semantic fields, or personal), many participants made use of more than one such type also including lexical approaches.

However, I would like to argue that these participants still all showcased a unidimensional sorting behaviour. As explained in Section 6.1.2.1, Tasks 2 and 3 asked the participants to sort the sixteen expressions “based on shared meaning”. These instructions were kept as vague as possible in order to not make specific reference to the constructional meaning the experiment was designed to look for. Therefore, it was left to the participants to decide which kind of meaning they chose as a shared feature for their categories. Furthermore, the distinction between structural, constructional, lexical, semantic field, and personal approach is based on a linguist’s knowledge of different aspects involved in an expression’s overall meaning. It cannot be expected of the participants to either know of these different aspects of meaning, or to have this knowledge at the ready whilst doing the experiment. Therefore, all participants—even when, from the researcher’s perspective, they mixed different types of categorisation strategies—showcased a unidimensional sorting behaviour on the much broader level of ‘shared meaning’ regardless of what type of meaning it was.

In order to diminish such mixed sorting behaviour (from the researcher’s perspective) for future experiments, different measures could be taken. On the one hand, the sixteen *of*-NPs would have to be selected such that the semantic overlap based on shared semantic fields is reduced to a minimum, although it is probably impossible to completely eliminate such an effect. On the other hand, participants could be primed on the constructional meaning of these *of*-NPs, by explaining the meaning relationship between ConEn1 and ConEn2 to them (as was indeed done with one participant group in Bencini & Goldberg’s (2000) study). Based on such priming, participants could be expected to produce more constructional sorting. Subsequently, their categories could be used to test whether participants, having been given the framework within which these expressions are examined, would consistently reproduce the researcher’s corpus categories.

Furthermore, the different results between Tasks 2 and 3—both in the overall frequency of recreated corpus categories and identified constructional meanings, as well as in the different sorting behaviours of the three participant groups—are not to be interpreted such that the corpus categories in Task 3 need to be reconsidered. Instead, they are merely indicative of the above mentioned idiosyncrasy of the corpus categories in Task 2, and a result of different choices of sorting strategies available. Participants will choose the categorisation strategy most readily available to them. For linguistics experts, this might be a more grammatical or constructional approach, while

non-experts will make use of other knowledge to fit the expressions into a category—e.g. shared semantic fields or personal judgements. The constructional meanings in Task 2 were more striking and thus easier for participants (including non-experts) to identify, while Task 3 was more difficult in that respect. Indeed, the results for each of the eight corpus categories show that there is always a percentage of participants from all three participant groups who did recognise the constructional meaning of each category. Thus, even though participants sometimes resorted to different sorting strategies unrelated to an *of*-NP's constructional nature, and even though such differing strategies tended to occur more often within the L1 non-expert participant group, the categories' existence as found through the corpus analysis in Chapter 4 has been confirmed by the online experiment.

Finally, this chapter concludes the extended data cycle of this study. As a last approach to English *of*-NPs, the sorting experiments presented here have addressed Dąbrowska's (2010) observer's bias (Section 1.2.3), and have investigated non-experts' intuition about different types of *of*-NPs and have shown that the different constructional meaning relationships of Chapter 4 are indeed justified. Furthermore, by also including other linguists in the experiment, the researcher's categorisation has also been confirmed by the linguistic analysis of other experts. Hence, this cognitive approach has complemented the corpus analysis presented in Chapter 4 by testing its validity. In addition, it has offered a new insight into the different types of *of*-NPs from an outsider's point of view and has uncovered certain aspects of the phenomenon, such as the descriptive nature of Subcategory CA6.

Chapter 7, as a conclusion to this thesis, takes a closer look at how this study has benefited from its four different approaches, and how they have influenced one another to reach a multidimensional understanding of the phenomenon of English *of*-NPs.

7 Discussion: Capturing the multifaceted nature of *of*-NPs

In conclusion, this study has investigated the multifaceted nature of *of*-NPs. As outlined in Chapter 2, *of*-NPs have been given a lot of attention in previous literature. However, attention has primarily been paid to the notion of headedness, and whether *of*-NPs are to be regarded as left- or right-headed. This debate has resulted in idiosyncratic cases generally being overlooked, because they could not be made to fit these structural models. As a consequence, important aspects of the nature of *of*-NPs have been ignored, and this grammatical phenomenon has previously not been researched in its entire complexity.

As argued in Chapter 1, a grammatical phenomenon such as English *of*-NPs consists of a multitude of different aspects such as their internal structure, their semantic constituency, their behaviour and function(s) in context, and their grammatical function. These aspects all contribute to the multifaceted nature of the phenomenon. Indeed, *of*-NPs (and indeed any grammatical phenomenon) have been likened to an unattended flock of sheep, which are quite hard to grasp and control if approached from one side only. Just like a sheepdog circles his flock of sheep and barks at them from different directions to keep them contained, a grammarian needs to investigate their current research subject from various angles too. In other words, rather than restricting the discussion to headedness in individual types of *of*-NPs, these findings can be combined with results from further approaches investigating other aspects of the phenomenon's multifaceted nature.

It has been the aim of this study to provide such a multidimensional account of English *of*-NPs, in order to capture their complexity more efficiently. This was achieved by the means of a multi-method approach in the form of the extended data cycle presented in Section 1.4.2. As a consequence, the structure and results of this study have been shaped and influenced by these multiple approaches. While the extended data cycle helped achieve the research aims given in Section 1.3, it also posed the risk of limiting the individual approaches, such that there would not be enough scope for them to effectively capture the nature of the separate aspects they targeted.

In the following, Section 7.1 thus first discusses how this study met the research aims presented in Section 1.3. It summarises the results of the four approaches in

Chapters 3 to 6 and shows how they have each offered answers to the three gaps in the literature of Section 1.2. Furthermore, Section 7.1 also illustrates how these four approaches have complemented one another. Section 7.2, then, moves on to a discussion of the limitations but also the strengths of such a multi-method approach. Based on these, but also based on results found within the four approaches, Section 7.3 identifies directions for future research in this area of English grammar, and Section 7.4 provides a final conclusion to this thesis.

7.1 A review of the research aims: The multifaceted nature of *of*-NPs

As stated above, it was this study's main aim to provide an account of the multifaceted nature of English *of*-NPs. It has aimed to cover and incorporate aspects of the phenomenon's nature which had so far been overlooked. Indeed, Section 1.2 has identified three main gaps in the literature: (i) most previous research has focused on only one type of *of*-NP at a time (although individual studies have examined different types), thus ignoring idiosyncratic examples and how the different types are related; (ii) apart from a few studies which look at verb agreement to determine an *of*-NP's head, most of this research also does not take the role of the expressions' context into consideration; (iii) Dąbrowska (2010) has identified the need to examine a grammatical phenomenon, and thus also English *of*-NPs, from the perspective of other researchers, and, more importantly, from the perspective of non-experts, in order to include multiple opinions and avoid the so-called observer's bias. In subsequent Chapters 3 to 6, these gaps have each been addressed in detail by means of four different approaches: a theoretical, corpus, cotextual and cognitive approach.

The following Sections 7.1.1 to 7.1.3 discuss how the three problematic areas have been filled by the multi-method approach, and summarise the results of the four individual approaches. What is more, throughout this study, these different approaches have been merged into an extended data cycle, which is repeated here in Figure 7-1. As has been alluded to throughout this study, and as is represented by the dashed arrows in Figure 7-1, the four approaches did not just function as standalone studies, but influenced and informed one another. Thus, Sections 7.1.1 to 7.1.3 also address this interaction between the four approaches and show how the results of this study grew organically out of the four approaches simultaneously.

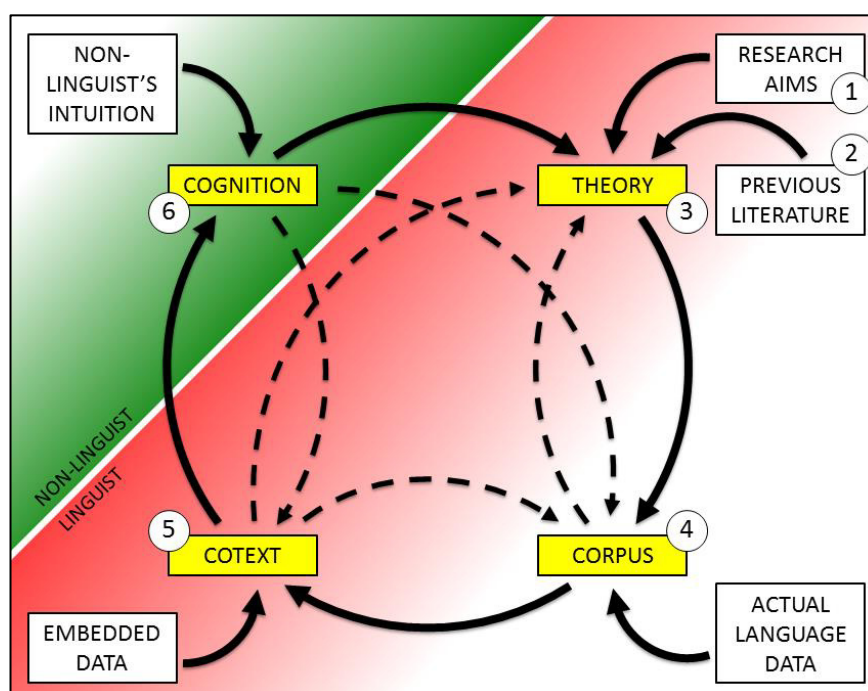


Figure 7-1: The extended data cycle relating the four approaches (2)

7.1.1 The diversity and idiosyncrasy of *of*-NPs

The first aspect of the nature of *of*-NPs, i.e. the phenomenon's diversity, has been addressed by the theoretical approach in Chapter 3 and the corpus approach in Chapter 4, aiming for the inclusion of core as well as peripheral examples and for the description of all the different types of *of*-NPs and their individual frequencies (also see Section 1.2.1).

While these two approaches have been presented in two separate chapters, and it looks as if the corpus analysis was preceded by the theoretical approach, both their findings actually emerged simultaneously. Indeed, after the review of previous work on *of*-NPs (Chapter 2), the phenomenon was approached from as neutral a viewpoint as possible by examining its occurrence within actual language data (Chapter 4). By the means of the online concordancer Sketch Engine (Kilgariff & Rychlý 2013c) all occurrences of *of*-NPs were extracted from the British National Corpus, from which a representative sample of 2,037 *of*-NPs was chosen for analysis—although for reasons of scope, this study has considered written data only. These 2,037 *of*-NPs were then manually analysed one by one. By looking at all types of *of*-NPs simultaneously, this process has unearthed the relationships between the different *of*-NPs: how they were

similar and dissimilar to one another. As a consequence, this new insight led to the development of the theoretical approach in Chapter 3.

Indeed, Chapter 3 has established a theoretical framework with which it is possible to account for every instance of an *of*-NP regardless of its potential idiosyncratic nature. Embedded in the frameworks of Construction Grammar and Conceptual Blending Theory, this approach has discussed the common denominator shared by all English *of*-NPs. Semantically, every *of*-NP is made up of three conceptual entities: ConEn1, which precedes, and ConEn2, which follows the relator *of*, are brought together in a meaning relationship to create the overall expression, i.e. ConEn3. Furthermore, the meaning of ConEn3 is determined by the lexical meaning of ConEn1 and ConEn2 as well as the constructional meaning relationship between the two. Hence, this approach views *of*-NPs as different types of constructions with different constructional meanings attached to them.

This variety of *of*-NP constructions was then examined in Chapter 4. Continuing the corpus based approach, the meaning relationship between ConEn1 and ConEn2 has been used to allocate *of*-NPs, whether core or idiosyncratic, to a specific *of*-NP category. The previously gathered 2,037 *of*-NPs have been manually categorised into different types of *of*-NP constructions according to the underlying meaning relationship between ConEn1 and ConEn2. As a result, 31 different categories and subcategories of *of*-NPs have been identified. These categories include core types of *of*-NPs such as *of*-NPs of possession (Category A, Section 4.3.2.1) or of engagement (Category D, Section 4.3.2.4), but also more idiosyncratic constructions such as the *of*-NPs of subjective apposition (Subcategory FC, Section 4.3.2.6) and the *of*-NPs of election (Category I, Section 4.3.2.9). Furthermore, this corpus study has related the different *of*-NPs to one another, grouping them together into larger categories, such as the two types of selection *of*-NPs (Category E, Section 4.3.2.5), or the three kinds of apposition *of*-NPs (Category F, Section 4.3.2.6). In addition, the study has also identified the frequencies of all 31 *of*-NP categories.

Hence, by combining a new, more semantically oriented, theoretical approach with a corpus-based analysis, it has become possible to incorporate all types of *of*-NPs into the same framework and identify 31 different *of*-NP categories and their relationships between. As a consequence, together, these two approaches have met two of this study's research aims. They have solved the problem of idiosyncrasy previously

found with other accounts in the literature, and they have provided an account of the phenomenon's diversity.

7.1.2 Analysing *of*-NPs within cotext

Based on these newly identified *of*-NP categories, Chapter 5 then addressed the second aspect of the phenomenon's nature so far neglected in previous literature: its context (also see Section 1.2.2). Indeed, in a cotextual approach, 199 *of*-NPs (i.e. just under 10% of the 2,037 expressions in the corpus dataset) were analysed within their cotext, i.e. their immediate textual environment. The *of*-NPs were selected to ensure an equal representation of each *of*-NP category in the cotextual dataset. Indeed, seven *of*-NPs were randomly selected from each *of*-NP category unless the category itself was smaller than a count of seven, in which case all instances of the category were collected. The cotexts of these 199 *of*-NPs were then extracted from the BNC via Sketch Engine. Each *of*-NP was then analysed in terms of their textual function, by means of a cohesion analysis. Based on Halliday & Hasan's (1976, 1989) work on cohesion, and inspired by the notion of conceptual entities established with the theoretical approach (Chapter 2), this analysis has established two novel concepts: an *of*-NP's cohesive footprints and its cohesive landscape (see Section 5.2.3). By means of these two concepts, five textual functions of English *of*-NPs have been identified, namely elaboration, linking, transition, introduction and mention.

Subsequently, combining the cotextual approach with the results from the corpus analysis, Chapter 5 has examined whether these textual functions correlate with specific types of *of*-NPs, i.e. whether certain *of*-NP constructions were more likely to fulfil one or more of the five textual functions. While the scope of this thesis did not allow for a statistical analysis of such a correlation, a qualitative analysis of the distribution of textual functions across the 31 categories of *of*-NPs has shown that some types of *of*-NPs do seem to favour one or another textual function. Indeed, in these cases the textual function links up logically with the constructional meaning relationship of the expression in question. For example, the *of*-NPs of qualification (Category B, Section 4.3.2.2) have been found to fulfil the textual function of elaboration most often. What is more, with two sample cotexts in Section 5.5.2 it has been shown that the constructional meaning of an *of*-NP can be cohesively tied to its cotext too. Hence, by identifying the five textual functions of *of*-NPs, this cotextual approach has examined a further aspect of the phenomenon's multifaceted nature.

What is more, by bringing the functions into relation with the 31 corpus categories, it has contributed to this study's aim to provide a multidimensional picture of English *of*-NPs.

7.1.3 Experts' and non-experts' interpretation of *of*-NPs

In a final step towards capturing the multifaceted nature of *of*-NPs, Chapter 6 then took a step away from the researcher's own, individual perspective in order to address Dąbrowska's (2010) observer's bias (see Section 1.2.3).

In an online sorting task adapted from Bencini & Goldberg (2000), eight of the *of*-NP categories from the corpus approach were tested against other linguists' analysis and, more importantly, against the intuition of non-experts. Specifically, 174 participants were asked to sort 32 *of*-NPs into eight categories based on shared meaning. The aim of this experiment was to identify whether other linguistics experts as well as non-experts would recreate the same categories as the ones found in the corpus analysis, and whether there were any noticeable differences in the sorting behaviour of experts and non-experts. It has been shown that the corpus categories were all recreated by both experts and non-experts alike. However, experts have done so more reliably, and non-experts have shown a stronger tendency to sort expressions by shared lexical meaning or shared semantic field membership rather than by constructional meaning. Furthermore, it has been shown that idiosyncratic *of*-NPs were recreated more reliably by all participant groups, whereas core categories resulted in increased variation in participants' sorting behaviour. Hence, this cognitive approach has shown that the constructional meaning of *of*-NPs is recognised by both experts and non-experts, although more frequently by the former. Simultaneously, it has taken a step towards confirming the results from the categorisation process of the corpus approach, and thus towards its inter-coder reliability.

In addition, the sorting tasks have also uncovered new aspects of these categories. As presented in Section 6.1.2.1, for each of their categories, participants were asked to explain the shared feature which they had chosen to group the *of*-NPs together. These explanations have shed light onto the participants' interpretation of each *of*-NP, uncovering by intuition features of each category which neither the corpus nor the cotextual approach had so far detected. The most striking example of this are the *of*-NPs of Subcategory CA6 (Section 4.3.2.3). In the corpus dataset, these *of*-NPs have been grouped together based on their common constructional meaning of

CONEN1 QUANTIFIES AND GRADES CONEN2, and in the cotextual analysis, due to their low frequency, no true correlation could be found between these expressions and their textual functions (see Table 5-16 on page 168). The definitions for these *of*-NPs given by the 174 participants in sorting Task 2, however, have addressed aspects which the research had not identified so far. Most significantly, the participants frequently defined these *of*-NPs as descriptive expressions used to describe a person or thing. This definition relates to the fact that *of*-NPs of Category CA6 commonly appear in relational sentences such as *she is a bit of an eyeful*, where they function as Attribute,⁹⁸ which is indeed the case for all three instances of Category CA6 in the corpus dataset. Hence, by the means of the online experiments, it has been possible to (i) confirm the corpus categories established in the corpus dataset, (ii) explore the different sorting behaviours of L1 non-experts, L1 experts, and L2 speakers, and (iii) identify other features of these *of*-NPs that had so far not been considered.

As a whole, these four approaches have addressed multiple aspects of *of*-NPs, and have brought them into relation with one another. By this means, a multidimensional image of the nature of *of*-NPs has emerged. What is more, it has been shown that the description of *of*-NPs as undertaken in this study has emerged organically from the combination of the four approaches, rather than separately from each approach. In other words, the four approaches did not produce their own individual results disconnected from one another, but they either formed the basis for, or shed a new light on, another approach's analysis. They informed one another and offered a more multidimensional picture of the multifaceted nature of *of*-NPs. In so doing, this study has managed to incorporate all types of *of*-NPs into the same framework, including both core and idiosyncratic expressions. As discussed in Section 1.2.1, this has not previously been possible. Previous literature has either been forced to disregard idiosyncratic cases, or has focused on one type of *of*-NP only, thus disregarding the connections between the different categories.

This is not to say that the previous accounts on *of*-NPs are false or misguided. They simply investigate another aspect of the phenomenon's nature, i.e. its internal structure. Indeed, the findings of these structural accounts complement the constructional categories found as part of this study. As has been shown in Sections

⁹⁸ For a definition of relational clauses and the role of Attribute therein, see Thompson (2004: 96-100).

4.3.2.1 to 4.3.2.9, the structural constraints on certain types of *of*-NPs that have been outlined in previous literature (see Keizer 2007) have been confirmed by the *of*-NP categories in the corpus dataset, and some previously discussed types of *of*-NPs have either been integrated into larger categories (see for example the *of*-NPs of typicality in Section 4.3.2.8) or have been closely related to other *of*-NP categories (such as the different *of*-NPs of apposition in Section 4.3.2.6). Thus, this new research complements previous research by investigating further aspects of the nature of *of*-NPs.

However, what this research illustrates are the benefits of, and indeed the need for, a multi-method approach to a grammatical phenomenon. Where other, singularly structurally oriented accounts have fallen short, the multi-method approach has provided deeper insights into the nature of *of*-NPs. Only by approaching *of*-NPs from different angles was it possible to reach a better understanding of their behaviour, providing for all types of *of*-NPs as well as identifying connections between their different features. Rather than just analysing *of*-NPs internally and out of context, this approach has yielded categories based on corpus insights, cotextual analysis, and on input from other linguists as well as non-experts' intuition. It has further identified the textual functions of *of*-NPs and different sorting behaviours of different participant groups, and has shown how these new insights link in with and depend on each other, thus offering a more solid grasp of the complex and interconnected nature of this phenomenon. Where a solely structural approach to *of*-NPs (and indeed any other grammatical phenomenon) is a balancing act on a single tightrope, a multi-method approach like the one presented in this study offers a set of ropes that are secured at different anchor points, that are interconnected with one another and that thus provide a safer net, covering a wider proportion of the nature of *of*-NPs.

7.2 Limitations of this study

Although this study has benefited considerably from the inclusion of multiple approaches, offering a deeper and more complex insight into a phenomenon's nature, such a multi-method approach also presents one major limitation to a study such as the one at hand. Because this research has incorporated four different approaches as well as knowledge from previous research, each individual approach had to be held at a manageable size in order to keep within the scope of this thesis. As a result, multiple

aspects of the phenomenon of *of*-NPs could not be included in the present research project. This section discusses these aspects in more detail.

The most notable restriction originating from the use of a multi-method approach for this thesis is that it has limited the size of the datasets used and has thus restricted each approach's insights. In the corpus approach, a higher number of *of*-NPs would have yielded more instances of any idiosyncratic categories, as well as more data for the analysis of *of*-NP clusters (see Section 4.3.3), whose nature could then have been analysed in more detail. Similarly, in the cotextual approach, it would have been necessary to analyse a larger number of cotexts in order to allow for a statistical analysis of the correlation between the *of*-NP categories and the five textual functions (see Section 5.5.1). Instead, the scope of this study has only allowed a qualitative analysis, which has given first insights into a logical correlation between a few types of *of*-NP constructions and their textual function. In the cognitive approach, only eight of the 31 categories of *of*-NPs could be tested against the interpretation of other experts and non-experts. While this number was also limited due to the nature of the experiments themselves (sorting tasks for all 31 categories would have taken the participants too long to complete and would have been too demanding), different sets of categories could have been tested with different cohorts in order to cover all 31 categories. Hence, the use of a multi-method approach has forced the individual datasets used to be limited to a smaller size to fit in with the scope of this study.

What is more, next to the size of the individual datasets, the use of multiple approaches has also limited the type of data that was used for the analysis of *of*-NPs in this study. First and foremost, for example, this study has solely focused on *of*-NPs from written data, as the inclusion of spoken data would have required the inclusion of aspects of spoken discourse such as intonation and stress patterns, which would not have been possible within the scope of the current research. In addition to being limited to written data, this study used the BNC as its sole source of *of*-NP expressions, and has thus been limited to texts from the late 1980s and 1990s (see Section 4.1.1.1). Finally, the sorting tasks conducted for this study were limited to online distribution and participants were thus kept completely anonymous, even towards the researcher. While this enabled the collection of a larger number of responses within a shorter amount of time, it would have been helpful to be able to query the participants directly after completion of the experiment and ask them for their reasonings behind their categories. This could have eliminated the cases marked as 'unclear' in the analysis of

the experiments and could have offered further, more detailed insights into the participants' interpretation of English *of*-NPs.

Hence, the use of a multi-method approach has limited the size and type of the data used within this study. However, as outlined in Section 7.1 above, the research presented here has also benefitted considerably from the inclusion of four different approaches. In fact, the four approaches have informed one another to such a degree to make possible the multidimensional description of the complex nature of English *of*-NPs, which would not have been possible had this study approached the phenomenon from one angle only. Instead, in combination, the four approaches have offered a first basic insight into the multifaceted nature of English *of*-NPs and have identified new aspects which can be explored in more detail in future research, which is presented in Section 7.3.

7.3 Directions for further research

The limitations of the present study open up possibilities for more future research on the nature of *of*-NPs. For example, the four approaches presented here can be extended to research on English *of*-NPs in spoken data, investigating whether they produce similar results. It would be interesting to explore whether spoken data yields the same distribution of frequencies for the various *of*-NP categories as written data. Indeed, certain *of*-NP categories might even be exclusive to written language and vice versa. Likewise, spoken *of*-NPs also need to be examined within their context in order to see whether they fulfil the same five textual functions as written *of*-NPs. Such research would need to include features of spoken discourse such as stress and intonation patterns.⁹⁹

Furthermore, as identified in Section 7.2 above, this study has based its research on data from the BNC, which includes texts from the late 1980s and 1990s. Future research would also have to consider more contemporary data, in order to see whether the *of*-NP categories identified in this study have changed in frequency over time, whether any of them have gone out of use and whether new ones have emerged. Such a diachronic investigation of *of*-NPs would tie in with research on grammaticalisation as previously undertaken by Davidse et al. (2008) and Traugott (2008a) on specific

⁹⁹ Also see 'stress' as a head-identifying feature for spoken *of*-NPs in Keizer (2007: 19), or see Chapter 2, Section 2.1.2.

types of *of*-NPs. In turn, this would also shed further light on fixed and semi-fixed *of*-NPs which have merely been included in this study as idiomatic instances of individual *of*-NP categories (see Section 3.3).

Additionally, *of*-NPs could be examined within different text genres to answer the question whether some types of *of*-NPs are more common in certain text genres than others. Similarly, further research could investigate whether the five textual functions are more common to specific text genres as well. For example, I hypothesise that the textual function of linking is more frequent in academic writing than other text genres, as it facilitates the combination of previously established concepts and allows for higher information density. On the other hand, the function of introduction might be expected to be more frequent in novels and other genres of storytelling, as it is a means to introduce new characters and advance the plot of a story. Such hypotheses need, however, to be confirmed in future research.

What is more, the online experiment presented as part of this study could also be expanded. Firstly, while Chapter 6 has only tested the accuracy of eight *of*-NP categories, further studies could also analyse the remaining 23 *of*-NP categories against the intuition of other experts and non-experts. Furthermore, the 174 participants of this study have not been given any input on the constructional meaning in English *of*-NPs and it was left to them to choose the semantic parameter by which to form their categories. In another experiment, it would be interesting to analyse to what degree such a theoretical input would influence the answers given by both expert and non-expert participants.

In addition to the aspects of English *of*-NPs discussed in detail in this study—such as the different *of*-NP categories, their behaviour within context, as well as other linguists' and non-experts' analysis of these expressions—a few other aspects and related phenomena have been mentioned that need more exploration with further research. Section 6.2.2.5 has shown that, as a result of the online experiment, participants have identified the grammatical function of *of*-NPs in Subcategory CA6, i.e. that they commonly appear as Attributes in relational clauses. This study has not considered the grammatical environment of the different *of*-NP categories, but future research could explore whether other *of*-NP categories are also associated with particular grammatical functions more often than with others. Furthermore, Section 4.3.3 has briefly touched on the phenomenon of *of*-NP clusters as found within the corpus dataset. While it has been shown—and confirmed by findings of research in

previous literature—that such clusters most often consist of rightward embedding, this study has also found instances of leftward embedding. Due to limited scope, however, it has not been possible to explore this phenomenon in more detail. Similarly, another related phenomenon identified here but left unexplored due to scope are the prepositional *of*-NPs mentioned in Section 4.3.1.2. As illustrated by Table 4-5 on page 85, the corpus analysis has yielded 33 instances of such prepositional *of*-NPs. These *of*-NPs—such as *on the side of caution* <769> or *to the best of my knowledge* <1539>—are special in that their ConEn1 consists of a prepositional phrase with a preposition that contributes considerably to the expression’s meaning and thus has to be considered as part of the *of*-NP. The nature of these prepositional *of*-NPs needs to be explored in more detail in future research.

Furthermore, each of the *of*-NP categories identified within this study and their relation to other categories has great potential for further research. Each category’s nature could be explored in greater detail by gathering larger samples of each individual type of *of*-NP, further exploring their constructional meaning, their internal structure, their grammatical function, as well as their behaviour within context.

Next to investigations emerging from results found as part of this study, future research could also examine how the theoretical framework and the notion of conceptual entities introduced in Chapter 3 relates to other schools of thought. While this novel perspective has allowed the inclusion of all types of *of*-NPs within the same study and has identified the similarities and differences between them, it has also set aside central aspects from previous research on these expressions. In particular, the notion of head has been backgrounded, which constitutes a core concept in studies on noun phrases in general (see Section 2.1). Thus, the question arises whether the novel idea of conceptual entities and the results of this study can be reconciled with previous grammatical accounts of the noun phrase. It needs to be investigated how the idea of conceptual entities relates to the notions of head, or type. What is more, further studies could investigate whether such a concept can also be found in other grammatical phenomena, such as other nominal and even verbal or adjectival constructions.

Finally, this study has only considered the phenomenon of *of*-NPs as it appears within the English language. A similar phenomenon can, however, also be observed in other languages such as German, Dutch, French, Spanish or Italian (see Napoli 1989; Keizer 2007: 16n3). For these phenomena, the extended data cycle as presented within this study could be used to explore their multifaceted nature in more detail.

Indeed, this extended data cycle can be used for research on any grammatical phenomenon, in order to reach a better, multidimensional, and thus more profound understanding of their nature.

7.4 Conclusion

In conclusion, this study has examined the complex nature of *of*-NPs from various different angles. With a multi-method approach, different aspects of the phenomenon's nature have been explored and brought in relation to one another. While previous research has mainly focused on the notion of headedness within these expressions, this notion has been backgrounded for the purposes of the research at hand. Embedded within the frameworks of Construction Grammar and Conceptual Blending Theory, this study has taken a more semantically oriented approach to English *of*-NPs. By this means, it has been possible to incorporate both core and idiosyncratic examples of the overall phenomenon of *of*-NPs alike, which has not previously been achieved in other research. By looking at a representative corpus sample, then, 31 categories and subcategories of *of*-NPs have been identified, each with a different underlying constructional meaning attached to them. In a further step, the phenomenon and its different categories were explored within cotext, identifying five different textual functions of *of*-NPs and potential correlations between these functions and the different *of*-NP categories. Finally, these results have also been tested against the analysis of other linguists as well as the intuition of non-experts. As a result, not only has this study explored and described the multifaceted nature of English *of*-NPs from a theoretical, corpus, cotextual and cognitive angle, but it has also illustrated the benefits of a multi-method approach to a grammatical phenomenon and has opened many doors for further research on *of*-NPs as well as other grammatical phenomena.

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Appendices

Appendix A: The corpus dataset

The corpus dataset as outlined in Chapter 4 can be found in the form of an Excel file on the DVD attached to this thesis. The file consists of three tabs, which each offer different pieces of information. Tab 1 contains the 2,000 concordance lines extracted from the BNC, as well as the corpus analysis discussed in Chapter 4. Tab 2 gives an overview of the 31 *of*-NP categories, their constructional meaning, as well as their frequencies within the corpus dataset. Tab 3 contains a grid that identifies all the concordance lines which were chosen for the cotextual analysis of Chapter 5.

Appendix B: The cotextual dataset

The cotextual analyses of the 199 *of*-NP cotexts as discussed in Chapter 5 can be found as separate PDF files on the DVD attached to this thesis. Each file is labelled with its corresponding concordance line number as well as with the respective *of*-NP category code. Like the analyses given within Chapter 5, each *of*-NP cotext is presented in a table and is split up into pre-cotext, *of*-NP, and post-cotext. In addition, each table also contains the cotextual icon corresponding to each *of*-NP's individual cohesive landscape. Furthermore, each file also contains information on the source of each cotext. This information was taken from the BNC by the means of Sketch Engine.

Appendix C: The cognitive dataset

The results from the online survey presented in Chapter 6 have been collated into five Excel files, which can all be found on the DVD attached to this thesis. The first four files contain the answers of the 174 participants. Each participant is given their own tab, which presents the categories they created in the three sorting tasks. The fifth merges the answers of all 174 participants for Tasks 2 and 3 into one document and identifies how they split up into corpus categories, approximating categories, and deviating categories as discussed in Chapter 6.

Appendix D: The online experiment

The three sorting tasks presented in Chapter 6 were conducted by the means of an online experiment on the online survey platform SocialSci. This online survey is presented in the following by a series of screenshots from every single survey page.

Categorising English expressions

estimated time is 20 minutes

Before taking this study, you must agree to the following:

Please read the following statement carefully:

By **completing** this survey, I (the respondent) confirm that I am **aged 18 or above**. Furthermore, I **give consent** for all my answers to be used for academic purposes by the researcher (David Schöenthal), including publications and presentations. I understand that all my answers will be **completely anonymous** and it will not be possible for any information provided to be traced back to me as an individual. I understand that *during* the completion of the survey I can withdraw from it at any time. I also understand that due to the anonymous nature of this survey, it will not be possible to withdraw my answers *after* the completion of the survey.

Once you click agree, the study will begin. It must be completed in one sitting.

Powered by SocialSci™

0%

Categorising English expressions

Hi!

This survey is part of my doctoral research project in linguistics at Cardiff University (Wales, UK). The survey consists of two parts. In the first part, you will be given three tasks of categorising objects and some English expressions. In the second part, you will be asked a few questions about yourself – purely for statistical purposes. The whole survey should take roughly 20–25 minutes maximum.

Many thanks in advance for your time and input!

Kind regards,
David Schönthal
(SchonthalD1@cardiff.ac.uk)

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Categorising English expressions

1 min

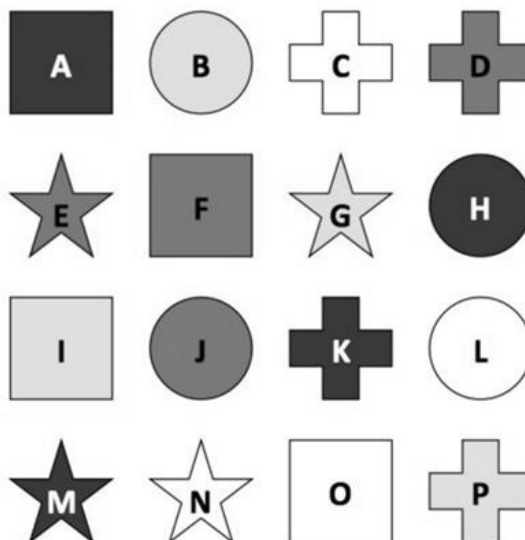
Categorizing objects

Below, you are given 16 objects, labelled from A to P. Each of these labels can also be found on one of the 16 cards below. Based on shared features, please drag and drop the 16 cards into the 4 categories provided on the right handside. If possible, try to put an equal number of cards into each of the four categories. Each of the 16 cards has to be used.

At the bottom of the page, you will find four fields where you can specify the shared feature you have chosen that defines each of your categories.

There is no right or wrong answer to this task.

To help you display this page with a better overview, you might find it useful to choose a smaller zoom in your web browser.



Reset Cards *

Object A	Category 1	Category 2
Object B		
Object C		
Object D		
Object E	Category 3	Category 4
Object F		
Object G		
Object H		
Object I		
Object J		
Object K		
Object L		
Object M		
Object N		
Object O		
Object P		

What are the features that define your four categories? *

If you can't explain what the shared feature of a category is, that's ok. You can state so in the box provided, too.

Category 1	
Category 2	
Category 3	
Category 4	

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Categorising English expressions

88%

Categorising expressions

Now, you are given 16 English expressions. Based on shared meaning, please drag and drop them into the 4 categories provided on the right handside. If possible, try to put an equal number of expressions into each of the four categories. Each of the 16 expressions has to be used.

There is no right or wrong answer to this task.

Again, below the 16 expressions, you will find four fields where you can specify the shared meaning that defines each of your categories.

Please sort the following expressions into four categories based on shared meaning *

the single of the week

a waiting list of three

too much of a softie

a reduction of 41 percent

one of their airports

a bit of an eyeful

a tad of a miss

the couple of the evening

a majority of 58 seats

the prettiest of this troupe

most of these symptoms

the goal of the year

something of a mystery

the word of the day

some of the columns

a span of ninety meters

Category 1

Category 2

Category 3

Category 4

Reset Cards

What are the features of shared meaning that define your four categories? *

If you can't explain what the shared feature of a category is, that's ok. You can state so in the box provided, too.

Category 1

Category 2

Category 3

Category 4

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Categorising English expressions

50%

Categorising expressions

Below, you are given another 16 English expressions. Based on shared meaning, please drag and drop them into the 4 categories provided on the right handside. If possible, try to put an equal number of expressions into each of the four categories. Each of the 16 expressions has to be used.

There is no right or wrong answer to this task.

As before, below the 16 expressions, you will find four fields where you can specify the shared meaning that defines each of your categories.

Please sort the following expressions into four categories based on shared meaning *

the provision of pensions

the size of the record

the kingdom of Castile

the generosity of the crown

the species of parrot

the concept of accountability

the analysis of the Oedipus myth

the type of bread

the content of the book

the loss of jobs

the village of Lockington

the value of the crop

this form of skin cancer

the scrapping of car tax

the kind of document

the discipline of hermeneutics

Category 1

Category 2

Category 3

Category 4

Reset Cards

What are the features of shared meaning that define your four categories? *

If you can't explain what the shared feature of a category is, that's ok. You can state so in the box provided, too.

Category 1

Category 2

Category 3

Category 4

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Categorising English expressions

6/6K

Personal details

Please provide the following information about your person. All information is for statistical purposes only and completely anonymous. It will not be possible to trace any given information back to you.

Gender *

Age *

Native language *

(if you are bilingual, and one of your native languages is English, please select 'English' in the options below)

☐ English

☐ Other

Nationality *

Country of residence *

Profession *

How did you find this survey? *

☐ I was sent an email or personal message

☐ on Facebook

☐ on Twitter

☐ Other

Have you ever studied linguistics? *

(at university or for the purposes of language teaching)

☐ Yes

☐ No

Have you got specialised knowledge of grammatical theory? *

☐ Yes

☐ No

How well acquainted are you with Construction Grammar? *

0 = 'not at all', 5 = 'very well'

0

5

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Is there anything you would like to add (comments or feedback)?

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Finish

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Thank you for helping further science.

Your response has been recorded! Thank you very much for your invaluable participation.
Should you be interested in learning more about the results to this survey, please don't hesitate to contact me via email
(SchonthalD1@cardiff.ac.uk) or visit my page on <https://cardiff.academia.edu/DavidSchonthal/>

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