

3 Types of anaphors

Moving from the definition and characteristics of anaphors to the types of anaphors, this chapter will detail the nomenclature of anaphor types established for this book. In general, anaphors can be categorised according to: their form; the type of relationship to their antecedent; the form of their antecedents; the position of anaphors and antecedents, i.e. intrasentential or intersentential; and other features (cf. Mitkov 2002: 8-17). The procedure adopted here is to categorise anaphors according to their form. It should be stressed that the types distinguished in this book are not universal categories, so the proposed classification is not the only possible solution. For instance, personal, possessive and reflexive pronouns can be seen as three types or as one type. With the latter, the three pronoun classes are subsumed under the term “central pronouns”, as it is adopted here.

Linguistic classifications of anaphors can be found in two established grammar books, namely in Quirk et al.’s *A Comprehensive Grammar of the English Language* (2012: 865) and in *The Cambridge Grammar of the English Language* (Stirling & Huddleston 2010: 1449-1564). Quirk et al. include a chapter of pro-forms and here distinguish between coreference and substitution. However, they do not take anaphors as their starting point of categorisation. Additionally, Stirling & Huddleston do not consider anaphors on their own but together with deixis. As a result, anaphoric noun phrases with a definite article, for example, are not included in both categorisations. Furthermore, Schubert (2012: 31-55) presents a text-linguistic view, of which anaphors are part, but his classification is similarly unsuitable because it does not focus on the anaphoric items specifically. For instance, it is doubtful if extended reference, i.e. *it* and *this/that* referring to a clause, belongs (as he details it) to his category of “comparative reference”, or to “personal reference” and “demonstrative reference” because these are personal/demonstrative pronouns (cf. *ibid.*: 35).

In addition, other classifications, for instance, from Huang (2000: 2-5) could be considered. He divides anaphora up into two syntactic categories: noun phrase- (including noun-) anaphora and verb phrase-anaphora. However, these classes are too broad and unspecific for computational tasks. Mitkov (2002: 8-15) proposes a further classification giving more weight to the computational aspect of anaphora resolution. He distinguishes between pronominal anaphora, lexical noun phrase anaphora, noun anaphora, verb anaphora, adverb anaphora and zero anaphora. Such categories are too vague from a linguistic point of view. For instance, lexical noun phrase anaphora is realised, per definition, as definite noun phrase or proper name and its antecedent is a full noun phrase.

Noun anaphora, such as *one* in example (6), however, does not have a full noun phrase but only a noun as antecedent. One problem of such a classification is, for instance, whether *this* belongs more to lexical noun phrase anaphora because it is a definite noun phrase, or to noun anaphora because it often takes only a noun as antecedent (see chapter 3.3). Additionally, clauses or sentences as antecedents are not considered in any of Mitkov's categories (cf. also Mitkov 2004a: 268-269). It is obvious that all these categorisations are not entirely adequate for anaphors.¹

The criteria that are taken into account in establishing the classification in this book rely on both linguistic viewpoints and practicability for computational tasks, with the linguistic aspect in the foreground. This means that the categorisation of anaphors predominantly follows linguistic criteria. Computational features are particularly taken into consideration in contexts where items classified as anaphors have to be distinguished from their non-anaphoric uses. Anaphors are here divided into 12 categories, which are: central pronouns; reciprocal pronouns; demonstrative pronouns; relative pronouns; adverbs; noun phrases with a definite article; proper names; indefinite pronouns; other forms of coreference and substitution; verb phrases with *do* and combinations with *so*, *this*, *that*, *it* and *the same (thing)*; ellipses; and non-finite clauses. These anaphor types and their items as well as a detailed description of their features – which will be important for anaphora resolution – are discussed in chapters 3.1 to 3.12.

3.1 Central pronouns

The expression “central pronouns” is an umbrella term covering personal, possessive and reflexive pronouns. According to Quirk et al. (2012: 345-346), these three types of pronouns form one category because they belong to each other more than do the remainder of pronouns. Personal, possessive and reflexive pronouns all differentiate between person, number and gender. More importantly, the characteristics of person, number and gender do not only unite central pronouns but also serve a fundamental role in finding the antecedent because anaphors and their antecedents usually have to show concord in these three features. Consequently, person, number and gender are of great impor-

¹ It should be mentioned that there are further classifications in the context of computational anaphora resolution. These classifications are not generally accepted but rather have been devised by individual researchers/authors. A selection of such classifications can be found with anaphora resolution systems in chapter 6.3.

tance for anaphora resolution. Furthermore, Quirk et al. (2012: 335-336, 346) state that central pronouns are by far the most important of all pronouns, especially personal pronouns, because of their frequency and grammatical features.

3.1.1 Personal pronouns

3.1.1.1 Subjective and objective forms

Personal pronouns divide up into subjective and objective forms, depending on the case that is required.² The subjective forms are *I*, *he*, *she*, *we* and *they*, and the corresponding objective forms are *me*, *him*, *her*, *us* and *them* respectively. *You* and *it* occur in both subjective and objective positions with one and the same form. The distinction between subjective and objective case forms goes back to the function a pronoun takes in a clause (see example (24) and (25); cf. Aarts & Aarts 1986: 48-49; Quirk et al. 2012: 335-339).³

(24) *He* was at home.

(25) I met *him*.

3.1.1.2 Person, number and gender

As mentioned in the introduction, the forms of personal pronouns distinguish between person, number and gender. As to person, personal pronouns fall into the categories of first person (*I/me*, *we/us*), second person (*you*) and third person (*he/him*, *she/her*, *it*, *they/them*). The first person is typically used for the speaker/writer (addresser) or a group including the speaker/writer. The second person typically denotes one or more hearers/readers (addressees) or a group of which the addressee is part. The third person is characteristically used for third parties that do not include addresser or addressee(s) (cf. Stirling & Huddleston 2010: 1463).

Furthermore, number distinguishes between singular and plural forms. The singular forms are *I/me*, *he/him*, *she/her* and *it*. The plural forms include *we/us*

² There is also a genitive form of pronouns – possessive pronouns – which constitutes a separate chapter (cf. chapter 3.1.2).

³ There are five functions that constituents can fulfil in a clause: subject, verb, (direct or indirect) object, (subject or object) complement, adverbial. These functions are then realised by clauses or phrases. There are five types of phrases: noun phrase, verb phrase, adjective phrase, adverb phrase, prepositional phrase. For an overview see, for example, Quirk et al. (2012), pp. 49-59 for functions, pp. 1047-1048 for clauses, and pp. 60-67 for phrases.

and *they/them*. The form *you* is used for both singular and plural. This classification does not mean that a plural form always refers to plural entities because it is possible for plural forms to refer to expressions with singular meaning in some situations. For example, *they* in (26) is interpreted as referring to an expression in the singular (cf. Carter & McCarthy 2006: 376-382; Quirk et al. 2012: 343-345). Moreover, if a personal pronoun refers to a collective noun⁴ such as *government*, singular and plural forms can be used (example (27) a) and b)). According to Quirk et al. (2012), the decision whether singular or plural pronouns are used indicates “a difference in point of view: the singular stresses the nonpersonal collectivity of the group, and the plural stresses the personal individuality within the group” (ibid.: 316). This is also reflected in the verb, which is singular or plural if it is in present tense. Third person -s occurs if the subject is understood as a unit (example (28) b)); the base form of the verb is used if the individuals are stressed (example (28) a)).

- (26) **Someone** who has never been skiing will not know what equipment they will need.
- (27) a) **The team** wins in every competition. It seems unbeatable.
 b) **The team** have decided that they will not take part in the next competition.
- (28) a) The team seem highly motivated.
 b) The team seems highly motivated.

Finally, masculine, feminine and neuter gender is distinguished. Gender is principally not so important in English as in other languages because in English, gender depends on the sex of the person (cf. Biber et al. 2007: 311). Therefore, only third person singular has different forms of gender. These are *he* for masculine, *she* for feminine and *it* for neuter. Masculine and feminine forms are subsumed under “personal” gender, which is contrasted to the “nonpersonal” neuter form. Personal gender forms are not only used for human beings, but for all living beings that are regarded as belonging to the human race. Because of this, personal gender forms can also refer to supernatural beings, for example, gods and angels, or to higher animals such as dogs (example (29)) (cf. Halliday & Hasan 2008: 47; Quirk et al. 2012: 341).

It is used in cases where *he* or *she* is not acceptable, i.e. *it* can refer to things, abstractions or even to a clause, or one or more sentences. In sum, *it* can refer to “any identifiable portion of text” (Halliday & Hasan 2008: 52), which

⁴ A “collective noun” is a “noun which denotes a group of entities” (Crystal 1994: 70).

Halliday & Hasan (2008: 52) call “text reference” and Quirk et al. (2012: 1461-1462) term “discourse reference”. A good example is (30) where *it* refers to the preceding sentence. Replacing the anaphor with the antecedent leads to *That David won the ski race was a great surprise*. Another term in this context is “extended reference”⁵, as shown in example (31), that Schubert (2012: 36) and also Halliday & Hasan (2008: 52-53) use if the antecedent “is more than just a person or object, it is a process or sequence of processes (grammatically, a clause or string of clauses, not just a single nominal)” (Halliday & Hasan 2008: 52).

Apart from that, some rarer uses are found: for instance, *it* can also refer to children, particularly in scientific reports with an emotional distance to the human being (cf. Quirk et al. 2012: 316-317). Additionally, personal gender forms, normally used for people, serve to personify objects. For example, *she* can refer to ships, countries or cars, although many people object to such a use. Personification is common in informal language and is notably a means in fiction and poetry, where everything can, in fact, be personified (example (32)) (cf. Biber et al. 2007: 317-318).

As for the choice of masculine or feminine gender forms, this decision relies on the sex of the person or animal referred to. As may be known, discussions about gender neutrality and sexual bias in language began in the second half of the 20th century within the feminist movement in the USA (cf. Wawra 2004: 2). As a result, new forms and practices have found their way into English. In order to avoid mentioning only masculine gender forms with personal pronouns, the expressions *s/he* or *(s)he* have developed in writing. However, these items are not possible in speech. Other forms such as *he/she*, *he or she* or singular *they* are common in both speech and writing. As *he/she*, *he or she* is very formal, singular *they* is commonly used, particularly if the reference is to expressions such as *person*, *someone* or *anyone* (example (26)) (cf. Carter & McCarthy 2006: 376-380; Biber et al. 2007: 316-317; Payne & Huddleston 2010: 426, 492-494; Quirk et al. 2012: 341-343, 347-348).

(29) **My dog “Snoopy”** is very lazy. He always sleeps in the afternoon.

(30) **David won the ski race.** It was a great surprise.

(31) **Peel the potatoes!** At least think about it.

⁵ Halliday & Hasan (2008: 52-53) distinguish between “extended reference” and “text reference”. However, Consten (2004) points out: “Halliday/Hasan (1976) prägen das Begriffspaar „extended reference“, deren Unterscheidung von „textual reference“ undurchsichtig bleibt.” (ibid.: 33).

(32) I cannot start **the computer**. He always refuses to work when I need him the most.

The classification of personal pronouns regarding person, number and gender is visualised in Table 1. With respect to case, the subjective case form is given first for those personal pronouns that have different forms for subjective and objective case.

Table 1: Personal pronouns

	Number	Singular		Plural
Person				
1 st		<i>I / me</i>		<i>we / us</i>
2 nd		<i>you</i>		<i>you</i>
3 rd	Masc.	<i>he / him</i>	<i>he/she / him/her,</i>	<i>they / them</i>
	Fem.	<i>she / her</i>	<i>he or she / him or her,</i>	
			<i>s/he, s(he), they / them</i>	
	Neuter	<i>it</i>		

3.1.1.3 Anaphoric and non-anaphoric use

In general, personal pronouns have definite meaning as they refer to entities that are identifiable without needing further information (cf. “Personal pronoun” n.d.; Stirling & Huddleston 2010: 1468; Quirk et al. 2012: 335).⁶ This does not mean that all personal pronouns are anaphoric. In more detail, personal pronouns of first and second person refer to entities present in the specific situation, so they are typically used deictically. However, *we/us* can be used anaphorically if it refers to a group including the addresser, namely if this group or person apart from the addresser is mentioned explicitly (example (33)). Apart from *we* in this use, personal pronouns of first and second person could be attributed anaphoric use in dialogues if the person concerned is mentioned. For example, in *She said: ‘I do not know him.’* the item *I* is related indirectly to *she* (cf. Halliday & Hasan 2008: 48-50). Such a use is not considered to be representing an anaphor here because the relation is indirect and therefore does not show real explicitness: *I* does not refer directly to *she*. *I* rather refers to the

⁶ An example of an indefinite use of personal pronouns is *it* in *It was a nice evening* (cf. Swan n.d.).

speaker and the speaker herself is introduced by *she*. However, there is no need to mention the speaker and in fact he or she is often left unstated.

With regard to third person personal pronouns, “the characteristic use of the 3rd person personal pronouns **he**, **she**, **it**, and **they** is anaphoric” (Stirling & Huddleston 2010: 1468) because the antecedent is usually present linguistically. The relationship between third person personal pronouns and their antecedents is commonly coreferential, since both refer to the same person or thing (cf. Siddiqui & Tiwary 2008: 185; Stirling & Huddleston 2010: 1465, 1468; Quirk et al. 2012: 865).

However, the third person forms *he/him*, *she/her*, *it* and *they/them* do not always take anaphoric interpretations in all contexts. First, these personal pronouns can refer to entities not present linguistically but identifiable from the context (cf. Stirling & Huddleston 2010: 1469-1470). Example (34) is a case in point. Here, the situation might show a man driving into a parking space and hitting a parked car. In this context, *him* and *he* refer to the man in this car.

Second, pronouns fall in between proper anaphoric and non-anaphoric uses in certain contexts. Stirling & Huddleston (2010) call these “quasi-anaphoric” uses (ibid.: 1470). The referent is not mentioned explicitly in such cases but interpretable from a related expression. For example, *they* refers to *Peter and his girlfriend* in (35), although only *Peter* occurs in the preceding sentence. It has to be inferred from the context that *and his girlfriend* is understood. Thus, *they* relates in some way to Peter but *Peter* is not itself the antecedent. For that reason, such expressions will not be considered here as they contradict the conditions for anaphors in this book because the antecedent is not present explicitly in the text. Moreover, these “quasi-anaphoric” expressions are common in informal language (cf. Stirling & Huddleston 2010: 1470-1471). Stirling & Huddleston (2010) remark that “in more carefully monitored speech or writing one would be more likely to use more explicit expressions” (ibid.: 1471).

(33) **Luke and I** know that Ms. Thomson is our neighbour, but we are not sure if she is married.

(34) Look at *him*! *He* is going to crash into that car.

(35) Peter called me yesterday. *They* are going to marry next week.

Third, personal pronouns of third person are non-anaphoric in generic use. Expressions show generic use if these “[refer] to an entire class of individuals, events, etc., rather than to specific members” (Matthews 2007: 156). To give an example, personal pronouns that are part of proverbs and colloquial idioms show generic use. Numbers (36) and (37) are instructive examples (cf. Speake

2008: 26, 302). Non-anaphoric instances in generic use are also found in sentences beginning with *He who...*, which occurs in proverbs (see example (38)) and is familiar from the Bible. Apart from these contexts, a generic use of personal pronouns is rare. *He* in generic use stands for any person or “people in general” (Quirk et al. 2012: 353), and is mostly used even sex-neutrally. In constructions where *he* refers to a male person, a corresponding expression for a female person, i.e. *She who...*, is possible as well.⁷ Furthermore, *it* in generic use refers to life in general, as demonstrated by the idiom in (39). Finally, generic *they* can be used for “people in general” (example (40)). *They* is also used to refer to an authority or institution that is not mentioned explicitly in the text, such as the government or the media (example (41)) (cf. Halliday & Hasan 2008: 53; Stirling & Huddleston 2010: 1468-1472; Quirk et al. 2012: 347-354, 1467).

An additional non-anaphoric use must not be forgotten. Consider, for example, number (42) (cf. Speake 2008: 346). Here, the first *he* is not anaphoric, and the second, third and fourth occurrence of *he* refer to the preceding *he* respectively. If such personal pronouns refer back to items that have been examined regarding their anaphoric or non-anaphoric status, but were identified as being non-anaphoric, all pronouns referring to such non-anaphoric items will not be considered anaphors. Such a use might occur in proverbs (example (42)) but also in other contexts. This procedure is adopted because establishing such relations is not relevant for computational systems. In more detail, knowing that *he* refers to the preceding non-anaphoric *he* does not help to find out about the textual content.

(36) The bigger *they* are, the harder *they* fall.

(37) The more you stir *it* the worse *it* stinks.

(38) *He* who dares wins.

(39) How's *it* going?

(40) *They* say the German team has the best chances of winning.

(41) *They* have increased taxes for petrol again.

(42) *He* that will not when *he* may, when *he* will *he* shall have nay.

⁷ The *Comprehensive Grammar of the English Language* considers *he* and *she* in *He who...* and *She who...* cataphors. Thus, *he* in (38), for example, would refer to the postmodifier *who dares* (cf. Quirk et al. 2012: 352-353). However, such instances are not cohesive. Halliday & Hasan (2008) state in that context: “The reference is within the sentence, and is determined by the structure of the sentence” (ibid.: 56). As a result, they are treated as non-anaphoric here.

A non-anaphoric use of *it* is termed “pleonastic *it*” (Lappin & Leass 1994: 538-539; Mitkov 2002: 9), “prop *it*”, “empty *it*”, “expletive *it*” (Quirk et al. 2012: 348-349, 749) and occurs in two more instances, apart from generic use in proverbs and idioms. These concern only *it* and not any other personal pronouns. First, *it* is especially used together with verbs or predicative adjectives⁸, denoting weather (example (43)), time (44) or place (45). Here, *it* only has the syntactic function of filling the subject position. Such clauses can often be reformulated and then result in clauses that do not include prop *it*. This reformulation is possible if a temporal clause contains both a subject complement that denotes a temporal state, and an adverbial as a noun phrase. Therefore, example (46) could be paraphrased as *Next week will be February 1*. Such reformulated clauses carry a similar meaning as prop-*it* clauses (cf. Quirk et al. 2012: 748-749). Apart from atmospheric, temporal and local conditions, *it* can also be used in utterances in which *this* can substitute *it* (example (47)).

(43) *It's sunny today.*

(44) *It's half past one.*

(45) *It's only a few hundred metres to the city centre.*

(46) *It will be February 1 next week.*

(47) *It was a good film.*

Second, non-anaphoric *it* occurs in extraposition and cleft sentences.⁹ In extraposition with *it*, the subject is postponed, and *it* fills this subject position. As a result, the sentence has two subjects, the notional subject found at the end of the sentence and *it* as the grammatical subject (cf. Hasselgård, Lysvåg & Johansson 2012; Quirk et al. 2012: 1403). A good example of extraposition is (48). The notional subject there is *that Linda won*. Such sentences with extraposition can be reformulated so that they do not contain *it*. Number (48) would then read *That Linda won surprised me* with the notional subject, and at the same time the grammatical subject, at the beginning of the sentence. Cleft sentences have the form of *it* plus *be*, which are followed by the expression on which the focus lies and a clause (see example (49)). The non-cleft version of (49) is *I started studying English last week*. Consequently, cleft sentences always place the stressed elements at the beginning, after *it* and *be* (cf. Aarts & Aarts 1986: 97-98; Stirling & Huddleston 2010: 1481-1483; Quirk et al. 2012: 348-349, 1384-1392).

⁸ These are adjectives functioning as subject or object complement (cf. Quirk et al. 2012: 403).

⁹ Similarly, such constructions could be regarded as cataphors (cf. Quirk et al. 2012: 349). This position is not adopted here.

(48) *It* surprised me that Linda won.

(49) *It* was last week that I started studying English.

3.1.1.4 Cataphoric use

Apart from anaphoric interpretation, cataphoric use is also possible with personal pronouns. In general, cataphors take either integrated or non-integrated antecedents. The antecedent of the integrated form is a constituent of a clause (example (50) a)), whereas the antecedent in the non-integrated type rather forms a separate clause or sentence (example (51) a)). The cataphor and the antecedent can often be reversed in the integrated form so that the cataphor turns into a “usual” anaphor. Such a change of positions in example (50) a) is shown in (50) b). An inversion, however, is not possible in all cases (see example (52)). In contrast, cataphor and antecedent in the non-integrated form cannot change their positions (example (51) a)). If the two expressions are changed here, this does not result in an anaphoric interpretation. Instead, the anaphor is not needed any more. For instance, the reversed order in example (51) a) does not need *it* (example (51) b)). Therefore, the possibility of changing positions is the decisive criterion to differentiate the non-integrated from the integrated type (cf. Stirling & Huddleston 2010: 1456).

Furthermore, Stirling & Huddleston (2010: 1476-1477) distinguish between first-mention and repeat-mention cataphors. With regard to first-mention cataphors, the cataphor itself introduces the entity into the text. Example (50) a), for instance, is a case of a first-mention cataphor. Number (53) demonstrates a repeat-mention cataphor. As will be noticed, repeat-mention cataphors do not mention an entity for the first time, since one or more expressions introduced that entity before. Such repeat-mention cataphors are not seen as cataphors proper here because expressions following the cataphor as well as one or more previous expressions can be viewed as antecedents.

(50) a) Although he is a fan of Arnold Schwarzenegger, **Frank** is not sure whether or not he should vote for him.

b) Although **Frank** is a fan of Arnold Schwarzenegger, he is not sure whether or not he should vote for him.

(51) a) It is now clear: **The dog has eaten the sausages.**

b) That the dog has eaten the sausages is now clear.

(52) Not only do I work with her, **Cindy** is also my best friend.

(53) Yesterday **Sue** had an appointment with her GP. As she was coming directly from her workplace, **Sue** forgot to bring her insurance card.

Cataphors with personal pronouns mainly occur in three constructions: within subordinate clauses, in a subordinate position within noun phrases, and within prepositional phrases at the beginning of clauses. If the pronoun is part of a subordinate clause, the antecedent is found in the rest of the main/superordinate clause, i.e. the matrix clause (cf. Quirk et al. 2012: 991).¹⁰ It is also possible that the antecedent is located in another subordinate clause of this main/superordinate clause. Example (50) a) shows a cataphor in the subordinate clause (the part before the comma); the second clause, which is the matrix clause, contains the antecedent. Similarly, a cataphor can take a subordinate role within noun phrases. Example (54) is a case in point, in which *the constant gossip about him* is a noun phrase. Here, *about him* postmodifies the head *gossip*, and so takes a subordinate position within the noun phrase.

Finally, cataphors are found in prepositional phrases if these are preposed, i.e. occur in the front position of a sentence (example (55) a)). Instances such as (55) a) illustrate cases where a cataphor is even necessary. Thus, if the items are reversed with the pronoun following the prepositional phrase (example (55) b)), the meaning changes. As a result, example (55) b) implies that the spider is above another person; *she* is no anaphor. Constructions such as (55) a) can be reformulated in another way, with the prepositional phrase taking the position at the end of the sentence, as in (55) c). Such a change turns the item *her* into an anaphor (cf. Stirling & Huddleston 2010: 1477-1478, 1490).

(54) The constant gossip about him made **Geoffrey** nervous.

(55) a) Above her, **Tina** saw a spider.

b) Above Tina, *she* saw a spider.

c) **Tina** saw a spider above her.

In addition, there are three special cases in which a cataphor can be found. With these, the restrictions about the subordinate position or position in a prepositional phrase at the beginning of a clause mentioned above do not apply. In one case, cataphors are used for rhetorical effect. Stirling & Huddleston (2010) explain their role as follows:

It is a quite common feature of journalism and novels to use anticipatory anaphora [i.e. cataphors] as a device to catch the listener's or reader's attention: pronouns are used to tempt the curious reader or listener into continuing to pay attention – so that they can

¹⁰ According to Quirk et al. (2012: 991), the subordinate clause is part of the main/superordinate clause. The term “matrix clause” is used to refer to the part of the main/superordinate clause without the subordinate clause.

find out who or what the pronoun refers to. In these cases reference by pronoun may continue across a number of sentences before a full NP [i.e. noun phrase] provides the required identification. (ibid.: 1480)

The second and third cases are instances of the non-integrated form. The antecedent can be the whole following main clause in one case (example (51) a)), or an expression attached to the clause, usually a noun phrase, in the other case (example (56)). The latter construction is termed “right dislocation”, i.e. an expression is added to a clause at its end, which is found more frequently in informal speech (cf. Stirling & Huddleston 2010: 1411-1412, 1480-1481; Quirk et al. 2012: 352, 1310).

(56) Do you know them, **Harry’s parents**?

3.1.1.5 Relationship between anaphor and antecedent

Personal pronouns are mostly coreferential with their antecedents, although not in all cases. If anaphors refer to expressions with quantifiers, no coreference arises (cf. Mitkov 2002: 6-7). A “quantifier” is “[a]ny word or expression which gives a relative or indefinite indication of quantity. [...] [It is] distinguished as such from a *numeral, which gives a precise and absolute indication of quantity” (Matthews 2007: 329). For example, the quantifier *few* in *few people* as contrasted with the numeral *three* in *three people* (cf. Aarts & Aarts 1986: 58 and Quirk et al. 2012: 376-380 for a list of items that are quantifiers). Example (57) illustrates an antecedent with the quantifier *every*. *She* relates in some way to *every woman* but cannot be replaced by the antecedent. If it were replaced, the meaning of the sentence would change: *Every woman knew that every woman had to give her best* is not the same as example (57). The situation can be described better by reformulating the sentence, namely *What every woman knew was that: I have to give my best* (cf. Stirling & Huddleston 2010: 1458, 1472-1475). Stirling & Huddleston (2010) explain:

Because the variable expressed by *she* is within the scope of a quantifier, it is said to be **bound** by that quantifier: the pronoun here therefore expresses a **bound variable**. (ibid.: 1473)

(57) **Every woman** knew that she had to give her best.

Items referring to interrogative pronouns as antecedents would also establish no coreferential relationship between anaphor and antecedent. But as inter-

rogative pronouns are sorted out in the process of identifying non-anaphoric relative pronouns (see chapter 3.4), all expressions referring to interrogative pronouns are not regarded as anaphors, for example, in *Who thinks they know the answer?* (cf. Stirling & Huddleston 2010: 1473-1474).

Additionally, no coreferential relationship arises if personal pronouns refer to a clause, or one or more sentences, which is only possible with *it* (example (30)). Furthermore, items are not coreferential if a cataphoric *it* refers to a following unit (example (51) a)). Esser (2009) states: “It must be pointed out that cataphoric reference is often not used to establish an overt referential relation in a text world (i.e. coreference) but rather to inform the reader of what comes next” (ibid.: 50).

As a result, these cases – whether anaphoric or cataphoric references to clauses, and references to expressions with quantifiers – fall neither into the category of coreference nor in that of substitution, and so are counted here to the miscellaneous category introduced in chapter 2.2.3 (cf. Stirling & Huddleston 2010: 1475; Quirk et al. 2012: 864, 868, 1461-1462).

3.1.1.6 Summary

Third personal pronouns take subjective and objective forms. Both forms are generally anaphoric, because “in writing an explicit referent will normally be required” (Halliday & Hasan 2008: 51). But from these, a variety of non-anaphoric uses of personal pronouns have to be marked off. Cataphoric uses are possible but restricted to certain constructions. Furthermore, the antecedent of personal pronouns is not restricted with regard to clause functions and so can take any function such as subject or object. Finally, personal pronouns are a form of reduction and mostly coreferential.

3.1.2 Possessive pronouns

3.1.2.1 Determinative and independent possessive pronouns

Possessive pronouns constitute the genitive form of central pronouns. Possessive pronouns fall into two classes, those with determinative function and those with independent function.¹¹ Determinative possessive pronouns encompass the

¹¹ Traditionally, the term “possessive pronoun” is applied to items of both classes, i.e. determinative uses are described with pronominal uses in one and the same chapter (see e.g. Esser 2009: 37-38; Quirk et al. 2012: 361-362). This also goes for reciprocal pronouns, demonstrative

forms *my*, *your*, *his*, *her*, *its*, *our*, *your* and *their*. Independent possessive pronouns take the forms *mine*, *yours*, *his*, *hers*, *its*, *ours*, *yours* and *theirs*. Obviously, *his* and *its* take the same form in both classes of possessive pronouns (example (58) and (59)). But yet, *its* in independent function is extremely rare. Additionally, *her* is a determinative possessive pronoun but has the same form in the objective position of personal pronouns (cf. Quirk et al. 2012: 70-71, 361).

The difference between the two classes of possessive pronouns is pointed out here: as the name suggests, a determinative possessive pronoun occurs within a noun phrase and here takes the function of a determinative¹² (example (60)). In contrast, an independent possessive pronoun is head of a noun phrase. An example of an independent possessive pronoun as object is (61), in which the anaphor refers to both *Sally* and *a working calculator* (cf. *ibid.*: 330-331, 336, 361-363).

Furthermore, it could be argued that independent possessive pronouns in subject and object position show ellipsis, in the way that only a possessive pronoun is used and the noun elided. An instructive example is (59), which contains the independent possessive pronoun *his*. *His* refers to both *Sam* and *the fountain pen* at the same time. It could be argued, though, that *his* elides the noun *fountain pen*. As a result, Quirk et al. (2012: 891) speak of “virtual ellipsis” in the case of *his* and *its*, and of “quasi-ellipsis” in instances such as (61). However, such instances are not treated with the category of ellipsis but with possessive pronouns (cf. *ibid.*: 361-363). Even Quirk et al. (2012) acknowledge: “Whether quasi-ellipsis or virtual ellipsis are to be treated as cases of ellipsis or as cases of substitution is a matter of definition” (*ibid.*: 891).

(58) We visited **John** and saw his new flat.

(59) **Sam** always leaves things behind. **The fountain pen** is his.

(60) Did **Linda** leave her documents at home?

(61) **Sally** has **a working calculator**. You can borrow hers.

pronouns, relative pronouns and indefinite pronouns. However, Stirling & Huddleston (2010: 1499, 1504) distinguish between determinative and independent uses. When describing items that take functions both as determinatives and as pronouns, they speak of “demonstratives” instead of “demonstrative pronouns”, for instance. This book follows traditional usage.

¹² A noun phrase distinguishes the functions determinative, premodification, head and postmodification. For example, the noun phrase *his early arrival in London* contains the determinative *his*, the premodification *early*, the head *arrival* and the postmodification *in London*. See Quirk et al. (2012: 60-62, 253-257) for more information about the functions of noun phrase elements and about determinatives.

3.1.2.2 Person, number and gender

Possessive pronouns distinguish between person, number and gender in the way personal pronouns do. With regard to person, first person pronouns are *my/our* and *mine/ours*. Second person has the forms *your* and *yours*. Finally, possessive pronouns of third person comprise determinative *his, her, its, their* and independent *his, hers, its, theirs* (cf. Quirk et al. 2012: 339-340).

Moving to number, the singular forms are *my, your, his, her, its* and *mine, yours, his, hers, its*. They are distinguished from the plural forms of *our, your, their* and *ours, yours, theirs*. The plural form *their*, for instance, can refer to singular forms, such as *everybody* in example (62), much the same as personal pronouns do. In addition, we find cases with collective nouns, i.e. expressions in the singular form such as *government*. If they are understood as a group consisting of individuals (example (63) a)) rather than as abstract units (example (63) b)), the pronoun is in the plural rather than in the singular. This distinction is also represented in the verb. In the case of *be*, for instance, the third person singular form *is* and the third person plural form *are* are used in the present tense (see example (63)). Furthermore, the third person singular form *was* and the third person plural form *were* can be differentiated in the past tense (cf. *ibid.*: 339-340, 1467).

Finally, third person singular distinguishes between forms of gender. Personal gender encompasses *his* as masculine, *her* and *hers* as feminine forms. *Its* is the only nonpersonal, i.e. neuter, form. Personal gender forms show close similarities to personal pronouns: possessive pronouns can also be found in place of expressions apart from human beings. Furthermore, personification is possible as well. Gender neutrality with possessive pronouns arises from using the form *their*, which is often preferred to the cumbersome formulation *his or her* (cf. Carter & McCarthy 2006: 382-383; Biber et al. 2007: 331-332; Payne & Huddleston 2010: 493-495; Quirk et al. 2012: 336-343, 770-771).

(62) **Everybody** should do their own training.

(63) a) **The government** are improving their programme to help people in need.

b) **The government** is improving its programme to help people in need.

The differentiation regarding person, number and gender is summarised in Table 2. The first item in each cell is the determinative form of the possessive pronouns; the element after the slash constitutes the independent form.

Table 2: Possessive pronouns

Person	Number	Singular	Plural
1 st		<i>my / mine</i>	<i>our / ours</i>
2 nd		<i>your / yours</i>	<i>your / yours</i>
3 ^d	Masc.	<i>his / his</i>	<i>his/her / his/hers,</i>
	Fem.	<i>her / hers</i>	<i>his or her / his or hers,</i>
	Neuter	<i>its / its</i>	<i>their / theirs</i>

3.1.2.3 Anaphoric/cataphoric and non-anaphoric use

In the same way as personal pronouns are anaphoric, possessive pronouns show anaphoricity. This means that possessive pronouns of third person typically carry anaphoric reference, both in determinative and independent function. With regard to determinative possessive pronouns, it could be argued that first and second person are also anaphoric if referring to *I*, *we* or *you*. Such cases are not explicitly discussed in the literature, but in this book, such instances are not seen as anaphors. *I*, *we* and *you* usually represent speaker/writer (addresser) and hearer/reader (addressee). Yet, *our* is seen as anaphor, analogous to *we*, if it refers explicitly to a third person unit apart from the addresser (example (33)) (cf. Stirling & Huddleston 2010: 1463-1466, 1468-1469).

As regards independent possessive pronouns, not only third person pronouns can be attributed anaphoric reference, though. The anaphoricity of first and second person is not found in Quirk et al. (2012) and Stirling & Huddleston (2010). It seems, however, justified to see first and second person as anaphors as well, at least in a certain way. It is undeniable that independent possessive pronouns have two elements as their antecedents. Even Halliday & Hasan (2008) argue for third person possessive pronouns that they are “doubly anaphoric [...] (i) by reference, to the possessor and (ii) by ellipsis, to the thing possessed” (ibid.: 55). Although *mine*, *ours* and *yours* refer to the addresser, addressee or a group in which these are part in one aspect, they refer to some other element in the second aspect. It is the second aspect that is the reason for treating such instances as anaphors. It will be readily apparent that *yours* in example (64) refers to the addressee in one part and to *car* in the second part. Only *car* is the antecedent that is considered computationally relevant. As for *ours*, it is possible that the part that refers to a person or group apart from the addresser is mentioned explicitly. In that case, *ours* is considered in both parts.

As to third person possessive pronouns, these also show non-anaphoric use. The contexts do not deviate much from personal pronouns. They involve sentences in which the antecedent is not present linguistically (example (65)) and quasi-anaphoric uses (example (66)). Moreover, proverbs but also sentences in other contexts can contain possessive pronouns that refer to non-anaphoric personal pronouns (example (67)). Finally, *their* and *theirs* can be non-anaphoric if these refer to an authority, an institution or people in general, i.e. anybody/anything that has not been mentioned explicitly in the text (example (68)) (cf. Speake 2008: 319; Stirling & Huddleston 2010: 1468-1472).

(64) Since my **car** did not work, I borrowed yours.

(65) Did you take *his* pen?

(66) Andy sent us pictures from *their* wedding.

(67) He that will thrive must first ask *his* wife.

(68) We do not like *their* programme.

When examining the cataphoric use of possessive pronouns, they can be compared to the description given with personal pronouns. The three central constructions identified above need no further adaption or extension. For the non-integrated forms, a few aspects need discussion, though. As only the personal pronoun *it* refers to the following sentence, such use is not possible with possessive pronouns. Furthermore, right dislocation seems to occur with personal pronouns only. That leaves cases in which cataphors occur for rhetorical effect. Example (69) shows a cataphor in a preposed prepositional phrase exemplarily (cf. Stirling & Huddleston 2010: 1477-1478, 1480-1481).

(69) For her spare time, **Linda** enjoys reading books by Sir Walter Scott.

3.1.2.4 Relationship between anaphor and antecedent

Anaphoric possessive pronouns in determinative function and their antecedents show a coreferential relationship in most instances. Some exceptions that have been mentioned with personal pronouns apply to possessive pronouns as well. Consequently, antecedents with a quantifier (example (70)) and items referring back to interrogative pronouns are not coreferential. In this case they are included in the miscellaneous category.

The relationship is different with independent possessive pronouns: they show substitution and coreference. For example, *hers* in (71) is a substitutional form of the noun phrase *her car*, which, furthermore, includes *her* as coreferen-

tial relationship. Consequently, they are classified into the miscellaneous category because they do neither fall clearly into the category of coreference nor into the category of substitution. In the case of first and second person, the relationship is also substitutional and coreferential. However, as the part with coreference is usually not relevant for these pronouns, they are classified referring to the substitutional part only (example (64)) (cf. Halliday & Hasan 2008: 55; Esser 2009: 37).

(70) **Each person** knows their name.

(71) Martin and **Lucy** wore similar T-shirts yesterday. His **T-shirt** was brown, hers was yellow.

3.1.2.5 Summary

Possessive pronouns divide up into determinative and independent uses, among which third person pronouns are usually anaphoric. Independent possessive pronouns of first and second person are anaphors as well, at least in a particular way. Cataphoric and non-anaphoric uses are in major parts similar to personal pronouns. Possessive pronouns are a form of reduction, as are personal pronouns. The relationship between anaphor and antecedent is coreferential in most instances of determinative possessive pronouns. Some determinative possessive pronouns belong to the miscellaneous category; the cases are analogous to personal pronouns. First and second person independent possessive pronouns show a substitutional relationship and third person independent possessive pronouns belong to the miscellaneous category because they are both coreferential and substitutional.

3.1.3 Reflexive pronouns

The third subtype of central pronouns is reflexive pronouns. According to their name, reflexive pronouns “‘reflect’ another nominal element of the clause or sentence, usually the subject, with which it is in a coreferential relation [...]” (Quirk et al. 2012: 356).¹³ Reflexive pronouns are formed from the first and second determinative possessive pronouns and the objective forms of personal pronouns. This results in the forms *myself*, *yourself*, *himself*, *herself*, *itself*, *our-*

¹³ “Nominal” means “[p]ertaining to nouns or to projections of nouns” (Trask 1993: 183).

selves, *yourselves* and *themselves*. Moreover, the generic form *oneself* for people in general could be mentioned (cf. *ibid.*: 356, 865).

3.1.3.1 Basic and emphatic use

Reflexive pronouns can be used in two ways, in basic (example (72)) or in emphatic use. The position of emphatic reflexive pronouns is variable. As a result, alternatives of example (73) a) are (73) b) and (73) c) (cf. Stirling & Huddleston 2010: 1488-1493; Quirk et al. 2012: 355-361).

- (72) **Andy** blamed himself.
 (73) a) **Betty** herself can do the homework.
 b) **Betty** can do the homework herself.
 c) **Betty** can herself do the homework.

The antecedent takes the following functions in a clause: in basic use, the antecedent is usually the subject of the clause, though there are other possibilities. Thus, the antecedent can be object (example (74)), or can even be found in a different clause as is the case with cleft sentences (example (75)). With regard to emphatic use, the antecedent is the element to which it has an appositional relation (cf. Biber et al. 2007: 343; Stirling & Huddleston 2010: 1486-1493, 1496; Quirk et al. 2012: 355-361, 387). The term “apposition” describes the “syntactic relation in which an element is juxtaposed to another element of the same kind” (Matthews 2007: 24). It might happen that the subject, and therefore the antecedent, is implied in some clauses, e.g. in *-ing*-participle clauses. In example (76), the participle clause has an implied subject, which is *Toby*. It is consequently important that such *-ing*-participle clauses are considered anaphors so that such references can be resolved (see chapter 3.12.2).

Another noteworthy fact is that reflexive pronouns contrast with personal pronouns of the objective form when looking for antecedents to anaphors. Accordingly, in example (77) the antecedent of *herself* is *Mary*. However, the antecedent of *her* cannot be *Mary* but has to be a different female person, which is not mentioned in this example (cf. Carter & McCarthy 2006: 385; Stirling & Huddleston 2010: 1484, 1489, 1492; Quirk et al. 2012: 356-357).

- (74) The children asked **Mary** about herself at the age of five.
 (75) It was for himself that **Tim** bought the chocolate.
 (76) In cooking the meal himself, **Toby** succeeded in surprising the family.
 (77) **Mary** talked to $\left\{ \begin{array}{l} \textit{her}. \\ \textit{herself}. \end{array} \right.$

3.1.3.2 Person, number and gender

As with personal and possessive pronouns, reflexive pronouns also distinguish between person, number and gender. First, person differentiation falls into first person with *myself* and *ourselves*, second person with *yourself* and *yourselves*, and third person encompasses *himself*, *herself*, *itself* and *themselves*. Second, number comprises the singular forms *myself*, *yourself*, *himself*, *herself* and *itself* and the plural forms *ourselves*¹⁴, *yourselves* and *themselves*. There is also the form *themself* for singular entities (cf. Payne & Huddleston 2010: 426, 494). As a result, *themself* and *themselves* can refer to singular *they* (cf. chapter 3.1.1.2). As can readily be seen, singular reflexive pronouns end in *-self* and plural ones in *-selves*. In addition, singular and plural forms can be used with collective nouns such as *government*, depending on whether the focus lies on the group as an abstract entity (example (78) a)) or more on the people as individuals (example (78) b)). Such a use follows the rules as outlined above for possessive pronouns (cf. Quirk et al. 2012: 316-317, 771).

- (78) a) **The government** committed itself to the proposed austerity measures.
- b) **The government** committed themselves to the proposed austerity measures.

Third, gender distinctions encompass personal gender with *himself* for masculine and *herself* for feminine use, and nonpersonal gender, which is *itself*. As with personal and possessive pronouns, reflexive pronouns can be used for entities apart from human beings. Furthermore, reflexive pronouns can occur in personification. Gender neutral formulations stem from the use of *himself* or *herself*, *himself/herself*, *themself* or *themselves* (cf. Payne & Huddleston 2010: 493-494; Quirk et al. 2012: 339-345). The categories of person, number and gender with reflexive pronouns are listed in Table 3.

Table 3: Reflexive pronouns

	Number	Singular	Plural
Person			
1 st		<i>myself</i>	<i>ourselves</i>
2 nd		<i>yourself</i>	<i>yourselves</i>

¹⁴ There is also a singular form of *ourselves* which is *ourself*. The form *ourself* refers to royal *we*, but is very rarely used (cf. Quirk et al. 2012: 344, 356).

3 rd	Masc.	<i>himself</i>	<i>himself/herself,</i>	<i>themselves</i>
	Fem.	<i>herself</i>	<i>himself or herself,</i>	
	Neuter	<i>itself</i>	<i>themselves, themselves</i>	

3.1.3.3 Anaphoric/cataphoric and non-anaphoric use

With regard to anaphoric use, reflexive pronouns are similar to personal pronouns in that only third person pronouns typically carry anaphoric function. But yet, first and second person of reflexive pronouns could also be seen as showing some type of anaphoric reference. Stirling and Huddleston (2010: 1485), for example, argue that these pronouns have both deictic and anaphoric function. According to them, reflexive pronouns are deictic on the one hand because first and second person refer to addresser or addressee. On the other hand, reflexive pronouns are simultaneously anaphoric because they are linked to the antecedent, which is *I*, *we* or *you*. Example (79) shows first person, example (80) an instance of second person.

However, reflexive pronouns in first and second person are usually not seen as anaphors here. This goes back to the fact that first and second person reflexive pronouns only refer to addresser and addressee and not to other content words, as independent possessive pronouns do. As will be known, independent possessive pronouns consist of two parts: They refer to the addresser or addressee and the entity concerned. Only in their reference to the entity are they considered anaphors. There is one exception with reflexive pronouns: if *ourselves* refers to a third person mentioned explicitly, apart from the addresser, it is considered anaphoric, which is in analogy with *we*, *us* and *our* (cf. Stirling & Huddleston 2010: 1477-1478, 1490-1496).

(79) I carried the bags *myself*.

(80) You cannot carry the bag *yourself*!

Furthermore, some third person reflexive pronouns are treated as non-anaphoric. This includes sentences where the reflexive pronoun refers to a third person personal pronoun that is itself no anaphor. In doing so, these third person reflexive pronouns are regarded in the same way as first and second person ones. The contexts where this occurs are similar to personal pronouns, e.g. quasi-anaphoric uses or uses in proverbs (cf. *ibid.*: 1477-1478, 1490-1496).

In addition, reflexive pronouns can be used cataphorically. This involves preposed prepositional phrases, as is the case with personal and possessive pronouns. However, a reflexive pronoun can also be preposed even if it is not a

prepositional complement (example (81) a)), although such a use is rare. The non-preposed construction, which then contains an anaphoric reference, is given in (81) b). Constructions where the anaphor is in a subordinate clause or in a subordinate position within a noun phrase seem not to be possible with reflexive pronouns because reflexive pronouns are more tied to the antecedent. Nevertheless, cataphor and antecedent can be located in different clauses. Number (82) demonstrates a construction where the antecedent is located in a subordinate clause (cf. Stirling & Huddleston 2010: 1477-1478, 1490-1496; Quirk et al. 2012: 361).

(81) a) (For) herself, **Chloe** bought some ice cream.

b) **Chloe** bought herself some ice cream.

(82) It was for themselves that **the friends** organised the party.

3.1.3.4 Summary

Reflexive pronouns show basic and emphatic use. As for anaphoric, cataphoric and non-anaphoric use, reflexive pronouns are similar to personal and possessive pronouns. For instance, third person reflexive pronouns are not anaphoric if they refer to a non-anaphoric personal pronoun. The antecedent can be subject, object or it is found in a different clause in basic use. The antecedent of anaphors in emphatic use is the item to which the anaphor has an appositional relation. Finally, reflexive pronouns are reductive and show a coreferential relationship.

3.1.4 Summary of personal, possessive and reflexive pronouns

From all central pronouns, third person pronouns are typically anaphoric. Additionally, items of first and second person with independent possessive pronouns are attributed a special anaphoric function. The items *we*, *us*, *our* and *ourselves* are anaphoric if they refer to an explicit third person expression. A cataphoric use is limited to certain constructions. Third person central pronouns also work non-anaphorically in specific situations.

Furthermore, central pronoun anaphors show reduction and contribute to the grammatical cohesion of a text. The relationship between anaphor and antecedent is mostly coreferential. Third person independent possessive pronouns belong to the miscellaneous category; independent possessive pronouns of second and third person show substitution. If the antecedent is a clause or sen-

tence or if it includes a quantifier, they belong to the miscellaneous category because they are neither coreferential nor substitutional. The categories *person*, *number* and *gender* as well as identifying the functions of a clause can help in finding the correct antecedent.

An overview of important aspects with central pronouns, as described in this chapter, is given in Tables 4, 5 and 6. They lay out whether specific features apply to an item (marked by “x”) or not (marked by “-”). The tables particularly summarise information that is relevant for the distinction between anaphoric and non-anaphoric use and the identification of the correct antecedent of each anaphor.

References from Table 4:

¹ Only relevant if person/group apart from addresser is given

² Being regarded only in their nonpersonal part of reference

³ For collective nouns; to avoid gender bias

⁴ May occur in the nonpersonal part of reference

⁵ Only in science

⁶ Only in personification

⁷ Only in cleft sentences

Table 4: Anaphoric use of central pronouns

	Number		Person/gender			Antecedent				Located in another clause	
	Singular	Plural	Human		Non-human		Material & non-material	Subject	Object		Clause/sentence
			Female	Male	Beings close to human race	Other beings					
Personal pronouns											
he	x	-	-	x	x	x ⁶	x	x	-	x	
him	x	-	-	x	x	x ⁶	x	x	-	x	
she	x	-	x	-	x	x ⁶	x	x	-	x	
her	x	-	x	-	x	x ⁶	x	x	-	x	
it (subjective form)	x	-	x ⁵	x ⁵	x	x	x	x	x	x	
it (objective form)	x	-	x ⁵	x ⁵	x	x	x	x	-	x	
we ¹	x	x	x	x	x	x ⁶	x	x	-	x	
us ¹	x	x	x	x	x	x ⁶	x	x	-	x	
they	x ³	x	x	x	x	x	x	x	-	x	
them	x ³	x	x	x	x	x	x	x	-	x	
he/she, he or she, s/he, s(he)	x	-	x	x	x	-	x	x	-	x	
him/her, him or her	x	-	x	x	x	-	x	x	-	x	
Determinative possessive pronouns											
his	x	-	-	x	x	x ⁶	x	x	-	x	
her	x	-	x	-	x	x ⁶	x	x	-	x	
its	x	-	x ⁵	x ⁵	x	x	x	x	-	x	
our ¹	x	x	x	x	x	x ⁶	x	x	-	x	
their	x ³	x	x	x	x	x	x	x	-	x	
his/her, his or her	x	-	x	x	x	-	x	x	-	x	

Independent possessive pronouns											
<i>mine</i> ²	x	x	x	x	x	x	x	x	x	x	x
<i>yours</i> ²	x	x	x	x	x	x	x	x	x	x	x
<i>his</i>	x	x ⁴	-	x	x ⁶	x ⁶	x ⁶	x ⁶	x	x	x
<i>hers</i>	x	x ⁴	x	-	x ⁶	x ⁶	x ⁶	x ⁶	x	x	x
<i>its</i>	x	x ⁴	x ⁵	x ⁵	x	x	x	x	x	x	x
<i>ours</i> ⁽²⁾	x	x	x	x	x	x	x	x	x	x	x
<i>theirs</i>	x ^{3, 4}	x	x	x	x	x	x	x	x	x	x
<i>his/hers, his or hers</i>	x	-	x	x	-	-	-	-	x	x	x
Reflexive pronouns: basic use											
<i>himself</i>	x	-	-	x	x ⁶	x ⁶	x ⁶	x ⁶	x	x	x ⁷
<i>herself</i>	x	-	x	x	x ⁶	x ⁶	x ⁶	x ⁶	x	x	x ⁷
<i>itself</i>	x	-	x ⁵	x	x	x	x	x	x	x	x ⁷
<i>ourselves</i> ¹	x	x	x	x	x ⁶	x ⁶	x ⁶	x ⁶	x	x	x ⁷
<i>themselves</i>	x	-	x	x	x	x	x	x	x	x	x ⁷
<i>themselves</i>	x ³	x	x	x	x	x	x	x	x	x	x ⁷
<i>himself/herself, himself or herself</i>	x	-	x	x	-	-	-	-	x	x	x ⁷
Reflexive pronouns: emphatic use											
<i>himself</i>	x	-	-	x	x ⁶	x ⁶	x ⁶	x ⁶	x	x	-
<i>herself</i>	x	-	x	x	x ⁶	x ⁶	x ⁶	x ⁶	x	x	-
<i>itself</i>	x	-	x ⁵	x	x	x	x	x	x	x	-
<i>ourselves</i> ¹	x	x	x	x	x ⁶	x ⁶	x ⁶	x ⁶	x	x	-
<i>themselves</i>	x	-	x	x	x	x	x	x	x	x	-
<i>themselves</i>	x ³	x	x	x	x	x	x	x	x	x	-
<i>himself/herself, himself or herself</i>	x	-	x	x	-	-	-	-	x	x	-

Table 5: Non-anaphoric use of central pronouns

	Antecedent not present in text	Quasi-anaphoric	Generic		People in general	Authority & institution	Reference to items identified as non-anaphoric	Atmospheric, temporal, local condition & cases where replacing with <i>this</i> is possible	Cleft sentences & extra-position
			Proverbs & idioms						
Personal pronouns									
<i>he</i>	x	-	x		x	-	x	-	-
<i>him</i>	x	-	x		x	-	x	-	-
<i>she</i>	x	-	x		x	-	x	-	-
<i>her</i>	x	-	x		x	-	x	-	-
<i>it</i> (subjective form)	x	-	x		x	-	x	x	x
<i>it</i> (objective form)	x	-	x		x	-	x	-	-
<i>we</i>	x	x	x		x	-	x	-	-
<i>us</i>	x	x	x		x	-	x	-	-
<i>they</i>	x	x	x		x	x	x	-	-
<i>them</i>	x	x	x		x	x	x	-	-
<i>he/she, he or she, s/he, s(he)</i>	x	-	x		x	-	x	-	-
<i>him/her, him or her</i>	x	-	x		x	-	x	-	-
Determinative possessive pronouns									
<i>his</i>	x	-	x		-	-	x	-	-
<i>her</i>	x	-	x		-	-	x	-	-
<i>its</i>	x	-	x		-	-	x	-	-
<i>our</i>	x	x	x		x	-	x	-	-
<i>their</i>	x	x	x		x	x	x	-	-
<i>his/her, his or her</i>	x	-	x		-	-	x	-	-

Independent possessive pronouns									
<i>mine</i>	x	-	x	-	-	-	x	-	-
<i>yours</i>	x	x	x	-	-	-	x	-	-
<i>ours</i>	x	x	x	x	-	-	x	-	-
<i>his</i>	x	-	x	-	-	-	x	-	-
<i>hers</i>	x	-	x	-	-	-	x	-	-
<i>its</i>	x	-	x	-	-	-	x	-	-
<i>theirs</i>	x	x	x	x	x	-	x	-	-
<i>his/hers, his or hers</i>	x	-	x	-	-	-	x	-	-
Reflexive pronouns (basic and emphatic use)									
<i>himself</i>	-	-	x	-	-	-	x	-	-
<i>herself</i>	-	-	x	-	-	-	x	-	-
<i>itself</i>	-	-	x	-	-	-	x	-	-
<i>ourselves</i>	-	x	x	-	-	-	x	-	-
<i>themselves</i>	-	-	x	-	-	-	x	-	-
<i>themselves</i>	-	x	x	-	-	-	x	-	-
<i>himself/herself,</i> <i>himself or herself</i>	-	-	x	-	-	-	x	-	-

Table 6: Cataphoric use of central pronouns

Integrated				Non-integrated			
	In a sub-ordinate clause	In subordinate position within a noun phrase	At the beginning of a sentence		For rhetorical effect	The following clause	Right dislocation
			In prepositional phrases	As head of noun phrases (on their own)			
Personal pronouns							
he	x	x	x	-	x	-	x
him	x	x	x	-	x	-	x
she	x	x	x	-	x	-	x
her	x	x	x	-	x	-	x
it (subjective form)	x	x	x	-	x	x	x
it (objective form)	x	x	x	-	x	-	x
we	x	x	x	-	x	-	x
us	x	x	x	-	x	-	x
they	x	x	x	-	x	-	x
them	x	x	x	-	x	-	x
he/she, he or she, s/he, s(he)	x	x	x	-	(x)	-	x
him/her, him or her	x	x	x	-	(x)	-	x
Determinative possessive pronouns							
his	x	x	x	-	x	-	-
her	x	x	x	-	x	-	-
its	x	x	x	-	x	-	-
our	x	x	x	-	x	-	-
their	x	x	x	-	x	-	-
his/her, his or her	x	x	x	-	(x)	-	-

Independent possessive pronouns									
<i>mine</i>	x	x	x	-	-	x	-	-	-
<i>yours</i>	x	x	x	-	-	x	-	-	-
<i>ours</i>	x	x	x	-	-	x	-	-	-
<i>his</i>	x	x	x	-	-	x	-	-	-
<i>hers</i>	x	x	x	-	-	x	-	-	-
<i>its</i>	x	x	x	-	-	x	-	-	-
<i>theirs</i>	x	x	x	-	-	x	-	-	-
<i>his/hers, his or hers</i>	x	x	x	-	-	x	-	-	-
Reflexive pronouns (basic and emphatic use)									
<i>himself</i>	-	-	x	x	x	-	-	-	-
<i>herself</i>	-	-	x	x	x	-	-	-	-
<i>itself</i>	-	-	x	x	x	-	-	-	-
<i>ourselves</i>	-	-	x	x	x	-	-	-	-
<i>themselves</i>	-	-	x	x	x	-	-	-	-
<i>himself/herself,</i>	-	-	x	x	x	-	-	-	-
<i>himself or herself</i>	-	-	x	x	x	-	-	-	-

Traditional grammar differentiates, apart from the three pronoun categories previously mentioned, between reciprocal, demonstrative, relative, interrogative and indefinite pronouns (cf. Sasse 1993: 669). Reciprocal pronouns will be discussed in chapter 3.2. Demonstrative and relative pronouns will be considered in chapters 3.3 and 3.4, and indefinite pronouns in chapter 3.8. They all show characteristics that they do not have in common with central pronouns. Interrogative pronouns are not discussed here because they cannot work anaphorically and cohesively, and so do not relate to an antecedent (cf. Halliday & Hasan 2008: 309; Huddleston, Pullum & Peterson 2010: 1037; Stirling & Huddleston 2010: 1462).

3.2 Reciprocal pronouns

This is a category with minor importance because its items do not occur frequently (cf. Quirk et al. 2012: 365). There are only two forms, *each other* and *one another*, which are both coreferential with their antecedent. Reciprocal pronouns resemble reflexive pronouns and, as Quirk et al. (2012) put it, “[they] are related to the reflexive pronouns in that they can be said to express a ‘two-way reflexive relationship’” (ibid.: 364). But yet differences between reflexive and reciprocal pronouns can be found as well, which can best be seen if the two pronoun types are contrasted. Example (83) a) contains a reflexive pronoun, example (83) b) a reciprocal one. The difference in meaning becomes evident if these sentences are paraphrased. As a result, example (83) a) can be reformulated as *Tom saw himself, and Sue saw herself*. But example (83) b) has to be paraphrased by *Tom saw Sue, and Sue saw Tom*. This means that reciprocal pronouns imply mutual relationship (cf. Sasse 1993: 675; Stirling & Huddleston 2010: 1502; Quirk et al. 2012: 345-346).

In addition, reciprocal, but not reflexive pronouns, have genitive forms, which are *each other's* and *one another's* (example (84)). Finally, reflexive pronouns and reciprocal pronouns take a different status within pronouns: “the reflexives [i.e. reflexive pronouns] are inflectional forms of the personal pronouns, while the reciprocals [i.e. reciprocal pronouns] are independent pronouns” (Stirling & Huddleston 2010: 1502).

(83) a) **Tom and Sue** looked at themselves in the mirror.

b) **Tom and Sue** looked at each other.

(84) **The twins** used each other's car.

3.2.1 Compound and split construction

Both *each other* and *one another* show two uses. The elements of each form can occur as a compound together (example (85)) or they can be separated and result in a split construction (example (86)). As compounds, reciprocal pronouns function as pronouns. In split construction, *each* and *one* function as determinatives of a noun phrase, *(an)other* is a noun and functions as head of a different noun phrase. The split construction distinguishes between items of two (example (86)) and three or more (example (87)), in which *other* occurs in the singular or plural (cf. Stirling & Huddleston 2010: 1499).

The two reciprocal pronouns are semantically the same as a compound, but *each other* is more frequent and commonly used in informal contexts, whereas *one another* is more typical in formal situations (cf. Quirk et al. 2012: 364). *Each other* and *another one*, however, behave differently in the split construction concerning syntax and semantics. Syntactically, they differ in which position they occur in a sentence. Semantically, *one* plus *(an)other* can be used for more reciprocal relations than *each* plus *other* (cf. Stirling & Huddleston 2010: 1499–1501).

(85) **The children** told each other a story.

(86) Each child told the other a story.

(87) Each of the **pupils** knows the others.

3.2.2 Anaphoric/cataphoric and non-anaphoric use

Reciprocal pronouns are usually anaphoric in compound and split construction. But if they are split, this leads to one construction in which the elements are not reciprocal, though anaphoric. This is if *one* functions as determinative of a noun phrase in subject position (example (88)). Such examples are regarded as instances of indefinite pronouns (see chapter 3.8) because only *other* refers back to the antecedent (cf. Stirling & Huddleston 2010: 1501). Moreover, if reciprocal pronouns refer to items that are themselves non-anaphoric, the expression is not seen as an anaphor, which is in analogy with central pronouns.

With regard to the antecedent, the following features can be observed. The antecedent of reciprocal pronouns is usually a noun phrase with a plural noun as head (example (85)) or it is an expression of noun phrases coordinated with *and* (example (89)). This is unlike reflexive pronouns, which can refer to a singular antecedent. The antecedent of reciprocal pronouns can have a singular

form in some cases but at the same time this item has to imply a group of people. Hence, *everyone* in example (90) is meant to include more than one person. Other singular instances are collective nouns, as in example (91). Moreover, antecedents may also be implicit, as with reflexive pronouns. To give an example, *each other* in (92) refers to the implied subject in the *-ing*-participle clause, which is *the group members* (cf. Stirling & Huddleston 2010: 1501-1504; Quirk et al. 2012: 365).

(88) One **event** follows the other.

(89) **The girls and their boyfriends** laughed at each other.

(90) **Everyone** greeted each other.

(91) **The couple** likes each other.

(92) Looking at each other, **the group members** finally agreed on the plan.

In addition, reciprocal pronouns can have a cataphoric interpretation. This is restricted to constructions in which the reciprocal pronoun and the antecedent are attached to the same noun. It is possible with prepositions, as example (93) shows. Both anaphor and antecedent are prepositional phrases introduced by *of* (cf. Stirling & Huddleston 2010: 1503).

(93) The film is about the betrayal of each other of **the friends**.

3.2.3 Summary

Reciprocal pronouns can be used in compound and split constructions. With regard to compound reciprocal pronouns, it can be said that they resemble reflexive pronouns. As to split reciprocal pronouns, it is important to mention that *one* is not a reciprocal within subject position if occurring with *(an)other*, but falls into the category of indefinite pronouns. The antecedent of reciprocal pronouns is usually plural, but can also be singular in specific circumstances. Furthermore, the antecedent can be implied, or it is found after the anaphor and therefore establishes cataphoric reference. As reflexive pronouns, reciprocal pronouns are coreferential with their antecedent and reductive devices. A visual summary is given in Table 7.

Table 7: Characteristics of reciprocal pronouns

Anaphoric					Cataphoric	Non-anaphoric	
Antecedent is singular		Antecedent is plural			Cataphor and antecedent attached to the same noun	In subject position	Reference to non-anaphoric items
Collective nouns	Indefinite pronouns e.g. <i>every-one</i>	Plural noun phrases	Singular noun phrases coordinated with <i>and</i>				
Compound construction							
<i>each other</i>	x	x	x	x	x	-	x
<i>one (an)other</i>	x	x	x	x	x	-	x
Split construction							
<i>each ... other</i>	x	x	x	x	x	-	x
<i>one ... other</i>	x	x	x	x	x	x ¹	x

¹ Is anaphoric, but as it belongs to indefinite pronouns it is regarded as non-anaphoric for reciprocal pronouns

3.3 Demonstrative pronouns

3.3.1 Dependent and independent demonstrative pronouns

This category includes *this*, *that*, *these* and *those*, which are either used dependently or independently. With regard to dependent function, they work as determinative or modifier. Thus, *this* in example (94) determines *instrument*. The whole expression *this instrument* is an anaphor with the antecedent *the guitar*. Example (95) illustrates a demonstrative pronoun as modifier, which is only possible for *this* and *that*. The independent function is demonstrated in example (96). Here, *these* works as a pronoun that refers to the antecedent *the red ones* (cf. Stirling & Huddleston 2010: 1504-1507, 1510-1511).

(94) Many people play **the guitar**. This instrument is probably the most popular one.

(95) This building is **100 metres** high. I am actually surprised it is this tall.

(96) There are some green and red apples in the kitchen. Look at **the red ones!** These are especially sweet.

3.3.2 Grammatical and referential aspects

With regard to grammatical characteristics, demonstrative pronouns differentiate between forms for number. The singular forms *this* and *that* for count nouns in the singular and for mass nouns, and the plural forms *these* and *those* for count nouns in the plural are distinguished. It is, however, also possible that singular demonstrative pronouns occur with reference to plural forms (example (97)) and, the other way round, plural items are used for singular forms (cf. Halliday & Hasan 2008: 62). Halliday & Hasan (2008) point out for such demonstrative pronouns: “they refer to the meanings and not to the forms that have gone before” (ibid.: 62). As for gender, all demonstrative pronouns can be used for either personal or nonpersonal reference. The nonpersonal function, however, is especially common in independent function. Personal function with independent demonstrative pronouns is only possible if they are used as subjects of a clause (example (98)).

Apart from number, the distance between speaker/writer and the referred entity is distinguished, which constitutes the referential aspect. *This* and *these* are used if referring to “near” objects or events, or even emotions (example (99)). *That* and *those*, by contrast, imply “distant” reference (example (98)). For example, the decision between *this* and *that* in (98) and (99) relies on the spatial or temporal distance between the speaker and the person/object referred to. See Table 8 for a visualisation of these characteristics (cf. Carter & McCarthy 2006: 389; Biber et al. 2007: 347; Payne & Huddleston 2010: 373; Quirk et al. 2012: 372–373).

- (97) Dad bought **sausages, carrots, cucumbers, potatoes, three pounds of beef and four packets of biscuits**. – What is he going to do with all that food?
- (98) Can you see **the man in the street**? That is Mr Miller, my neighbour.
- (99) Noah was playing **golf**. This new hobby of his has been taking up all of his time.

Table 8: Demonstrative pronouns

	Number	Singular	Plural
Reference			
Near reference		<i>this</i>	<i>these</i>
Distant reference		<i>that</i>	<i>those</i>

3.3.3 Anaphoric/cataphoric and non-anaphoric use

The antecedent of anaphoric demonstrative pronouns can take different forms. It can be a noun phrase (numbers (98) and (99)), an adjective phrase (example (100)) or adverb phrase (example (101)). With regard to independent demonstrative pronouns, the antecedent can also be a nominal only (see examples (102) and (103)). Even clauses or sentences can serve as antecedents of demonstrative pronouns (example (104)), but only for independent *this* and *that* (cf. Halliday & Hasan 2008: 53, 66; Quirk et al. 2012: 1461-1463; Schubert 2012: 36). Moreover, the antecedent with independent *this* can be a title or sub-title (example (105)). Here, *it* cannot occur (cf. Carter & McCarthy 2006: 246; Stirling & Huddleston 2010: 1506-1509; Quirk et al. 2012: 868).

- (100) The crayon you gave me was **blue**, but I did not want that particular colour.
- (101) Sue performed **incredibly well** last night. With this talent, she will certainly win tomorrow.
- (102) This **watch** is more expensive than that.
- (103) The **mountains** in Austria are higher than those in Germany.
- (104) **Toby will travel to Australia in August**. At least, that is what I understood.
- (105) **Syntax**
This is one field of linguistics.

Comparing independent demonstrative pronouns with personal pronouns, they can both be used with noun phrases or clauses as antecedents. Personal pronouns, however, are more common if the antecedent is a noun phrase. Demonstrative pronouns, by contrast, are more likely with clauses as antecedents. In such use, they show no coreferential relationship (cf. Halliday & Hasan 2008: 53, 66; Stirling & Huddleston 2010: 1506-1509; Quirk et al. 2012: 375, 868, 1461-1463).

Demonstrative pronouns are not always used anaphorically but frequently have deictic function. Quirk et al. (2012) even argue that “[t]he anaphoric and cataphoric uses of the demonstratives are extensions of their situational use” (ibid.: 375). With regard to deictic function, demonstrative pronouns relate to the spatial, temporal or emotional proximity. Example (106) a), on the one hand, could be used if the person was thinking of the specific book and thus is near in time. On the other hand, example (106) b) is likely if the person thought about the book some time ago, being distant in time.

Moreover, demonstrative pronouns can also refer to an entity which is not found in the situation or in the preceding text (example (107)). Instead, the demonstrative pronoun has to be interpreted from what is known or was experienced. Stirling & Huddleston (2010: 1510) term this case “recognitional use”, which is, however, informal. Dependent *that* or *those* are usually found with these constructions, but dependent *this* and *these* could also occur (cf. Quirk et al. 2012: 374-376).

- (106) a) I have found *this book*.
 b) I have found *that book*.
 (107) I never saw *that* ring he gave you.

A distinction between anaphoric and deictic uses of demonstrative pronouns cannot always be made, but it is also possible that demonstrative pronouns are anaphorically and deictically at the same time. For example, *that* is anaphoric in (108) as it refers back to the antecedent *the chair next to the drawer*. At the same time, it shows deictic meaning if *that* is used for a distant entity present in the specific situation (cf. Stirling & Huddleston 2010: 1506-1509; Quirk et al. 2012: 375).

- (108) Look at **the chair next to the drawer**. That is the one I bought.

In addition, the demonstrative pronouns *that* and *those* can even occur without having any anaphoric or deictic function. This is the case if independent demonstrative pronouns are postmodified by finite clauses (example (109)). The postmodification is enough to identify what is meant by the demonstrative pronoun here. For instance, *who do not keep their promise* in example (109) makes clear the non-anaphoric and non-deictic reference of *those*. But yet, independent demonstrative pronouns in such constructions are not always non-anaphoric, especially in formal contexts. Example (110) shows a case where independent *those* is anaphoric. There is, however, a difference between *that* and *those* in such a use. *Those* can be used if the antecedent denotes a person, animal or thing, *that* only for antecedents that are things. If it concerns dependent demonstrative pronouns, a head has to occur between demonstrative and postmodification (example (107)) (cf. Stirling & Huddleston 2010: 1510-1511).

Furthermore, two other non-anaphoric instances should not be forgotten. First, independent and dependent *those* plus head can be postmodified by a

partitive (example (111)).¹⁵ Such uses should not be confused with anaphoric cases postmodified by *of*-phrases (example (112)), which occur in formal, academic contexts (cf. Trask 1997: 163; Carter & McCarthy 2006: 251-252; Payne & Huddleston 2010: 413; Stirling & Huddleston 2010: 1510-1511). Second, non-anaphoric *this* and *that* are possible as a degree modifier (example (113)). *That* means “particularly” or “so” in this example. However, *that* can also be anaphoric if premodifying an adjective, at least in some contexts, such as example (95) (cf. Biber et al. 2007: 350; Payne & Huddleston 2010: 373; Stirling & Huddleston 2010: 1510-1511; Quirk et al. 2012: 866-867, 1466).

- (109) He does not belong to *those* who do not keep their promise.
- (110) The **people** in Siberia have a hard life. However, those who know how to make the best of their situation can enjoy it, too.
- (111) *Those* of you who know the answer should raise their hands.
- (112) This **theory** seems more plausible than that of Chomsky.
- (113) He was not *that* fast in the race.

Cataphoric instances of demonstrative pronouns are possible with non-integrated antecedents (example (114)). Such uses show similarities with *it*, which also occurs in non-integrated constructions. Demonstrative pronouns that take such cataphoric interpretations are restricted to the items *this* and *these* and to the modifier *that*, though (cf. Quirk et al. 2012: 375, 1461-1463). Stirling and Huddleston (2010) point out: “It would seem that there are no cases of distal **that** [i.e. *that* and also *those* in their terminology] that can properly be regarded as involving anticipatory anaphora” (ibid.: 1509).

- (114) This is the best news I have heard so far today: **The TV set is working again.**

3.3.4 Relationship between anaphor and antecedent

Demonstrative pronouns in independent function are a form of reduction; those in dependent function are rather a means to avoid repetition. Furthermore, demonstrative pronouns mainly show a coreferential relationship. If *this* and *that* refer anaphorically to a clause, they do not show coreference but belong to

¹⁵ “Partitives” are “constructions denoting a part of a whole” (Quirk et al. 2012: 249), which have the form of a prepositional phrase beginning with *of* (cf. Quirk et al. 2012: 249-251).

the miscellaneous category. Furthermore, a substitutional relationship to the antecedent is possible with *that* and *those*. Here, it depends on the individual use, whether a coreferential or substitutional relationship is shown. Substitution is illustrated in the examples (102) and (103), in which the demonstrative pronouns and the antecedents do not denote the same entities. In sum, coreference is the usual case with dependent uses of demonstrative pronouns, even if the nouns of the demonstrative pronoun and the antecedent are not the same. Here, pronoun and antecedent can be related in some form of synonymy, or hyponymy/hypernymy (example (94)) (cf. Carter & McCarthy 2006: 251-252; Halliday & Hasan 2008: 63; Quirk et al. 2012: 863-865, 872-873).

3.3.5 Summary

Demonstrative pronouns show anaphoric and cataphoric use. It does not matter if the demonstrative pronoun shows a deictic use simultaneously. Such instances will only be considered here regarding their anaphoric function. Furthermore, the relationship between anaphor and antecedent is coreferential in most cases. The exceptions are independent *that* and *those* that can be substitutional, especially if they have nominals as antecedents. Independent *this* and *that* can refer to a clause, in which case they belong to neither coreference nor substitution, but to the miscellaneous category. Cataphors are only possible with *this* and *these* and *that* as modifier.

With regard to non-anaphoricity, all demonstrative pronouns can occur in non-anaphoric use. *That* and *those* in particular are often not anaphoric together with specific forms of postmodifications. Finally, *this* and *that* as modifier can be used non-anaphorically, or in some situations, anaphorically. A summary of these features is given in Tables 9 and 10. They present characteristics that anaphors and antecedents of demonstrative pronouns have to share, and a summary of non-anaphoric features.

16 NP stands for “noun phrase”, *AdjP* for “adjective phrase” and *AdvP* for “adverb phrase”.

Table 9: Anaphoric use of demonstrative pronouns

Anaphor		Form of antecedent ¹⁶										Cataphor	
Number		Gender		Postmodification with finite clause	NP	AdjP	AdvP	Nominal	Clause	(Sub)title	Non-integrated		
Singu- lar	Plural	Non- count	Non- personal										
Independent function													
<i>this</i>	x	(x)	x	x ²	x	x	x	x	x	x	x		
<i>that</i>	x	(x)	x	x ²	x	x	x	x	x	-	-		
<i>these</i>	(x)	x	x ¹	x ²	x	x	x	x	-	-	x		
<i>those</i>	(x)	x	x ¹	x ²	x	x	x	x	-	-	-		
Dependent function													
<i>this</i>	x	(x)	x	x	x	x	x	-	-	-	x		
<i>that</i>	x	(x)	x	x	x	x	x	-	-	-	-		
<i>these</i>	(x)	x	-	x	x	x	x	-	-	-	x		
<i>those</i>	(x)	x	-	x	x	x	x	-	-	-	-		
<i>this as modifier</i>	x	x	x	x	x	x	x	-	-	-	x		
<i>that as modifier</i>	x	x	x	x	x	x	x	-	-	-	-		

¹ Only if two noun phrases are coordinated

² Only if the demonstrative pronoun functions as subject

³ In formal use

Table 10: Non-anaphoric use of demonstrative pronouns

	Deictic	Recognitional use	Postmodification		Degree modifier
			Finite clause	Partitive	
Independent function					
<i>this</i>	x	-	-	-	-
<i>that</i>	x	-	x	-	-
<i>these</i>	x	-	-	-	-
<i>those</i>	x	-	x	x	-
Dependent function					
<i>this</i>	x	(x)	-	-	-
<i>that</i>	x	x	x	-	-
<i>these</i>	x	(x)	-	-	-
<i>those</i>	x	x	x	x	-
<i>this</i> as modifier	x	(x)	-	-	x
<i>that</i> as modifier	x	x	-	-	x

3.4 Relative pronouns

3.4.1 Form and function

The forms of relative pronouns are *who*, *whom*, *which*, *whose*, *that* and zero *that*.¹⁷ Apart from their anaphoric function relative pronouns are also part of a relative clause. To give an example, *that* in (115) refers to the antecedent *the reason*, and at the same time it serves as the object of the relative clause (cf. Quirk et al. 2012: 1247-1253, 1257-1260).

(115) **The reason that you gave is not very convincing.**

Comparing relative pronouns to personal pronouns, relative pronouns differ from personal pronouns in a number of ways. To begin with, a relative pronoun is always at the beginning of a clause, irrespective of its function. Regarding the antecedent, a relative pronoun mostly refers to the preceding noun phrase that the relative pronoun postmodifies. For instance, *that you gave* in (115) is the relative clause that postmodifies *reason*. Antecedents taking other forms such as adjective, adverb and verb phrases are possible as well, though infrequent (cf. Huddleston, Pullum & Peterson 2010: 1035, 1052, 1060). Relative

¹⁷ Huddleston, Pullum & Peterson (2010: 1034) speak of “bare relatives” in the case of zero *that*.

and personal pronouns also have some features in common: they are both usually coreferential with their antecedents. Apart from that, relative pronouns are a form of reduction, as are personal pronouns (cf. Carter & McCarthy 2006: 387; Quirk et al. 2012: 365, 368).

3.4.2 Types of clauses and their anaphoric and non-anaphoric use

The items of relative pronouns have to be distinguished from related expressions. To start with, it is useful to differentiate between relative and appositive clauses because the form *that* occurs in appositive clauses as well as in relative clauses. Appositive clauses are not relevant here as they are not anaphoric. In appositive clauses, *that* is a conjunction (example (116)), and so can be distinguished from relative clauses in which *that* is a relative pronoun (example (117)).

Relative clauses then distinguish between adnominal, nominal and sentential relative clauses. Adnominal relative clauses (see example (117)) are the most important type of relative clauses and fall into two categories: restrictive and nonrestrictive. The restrictive category is the more frequent one. In general, these types represent how closely the adnominal relative clause and the antecedent to which the relative pronoun refers are semantically connected with each other. A restrictive clause represents a close connection, a nonrestrictive clause implies a more distant relation. Nonrestrictive clauses are usually embedded in between commas in writing. Restrictive clauses, on the one hand, delimit the semantic range of the antecedent, as in example (117) where the statement says that not all houses are enjoyed but only those on hills. On the other hand, nonrestrictive clauses further describe the antecedent and can be seen as comments inserted into a sentence (example (118)) (cf. Huddleston, Pullum & Peterson 2010: 1034-1035, 1058-1059; Quirk et al. 2012: 365-366, 1247-1250, 1257-1261).

The distinction between restrictive and nonrestrictive clauses is important because it influences which forms of relative pronouns can be used in the individual situation, as is shown in Table 11 below. Determinative *which* only occurs in nonrestrictive clauses. Furthermore, only nonrestrictive clauses take an antecedent that is a proper name or a whole clause (cf. Huddleston, Pullum & Peterson 2010: 1048, 1060-1061).

(116) It proved to be the right decision *that* we chose the more expensive machine.

(117) I like **houses** that are built on hills.

- (118) Susan called out to **her friend Tom**, who was just crossing the street.

In addition, a sentential relative clause refers to an antecedent that is a clause (example (119)). Of the items mentioned above, only *which* is anaphoric and used in sentential relative clauses (Quirk et al. 2012: 1119-1120).

Finally, nominal relative clauses use the forms *which*, *whom* and *who*, where *which* and *whom* occur only with certain verbs such as *like* or *wish*. These relative clauses “are unique among relative clauses in that they ‘contain’ their antecedents” (ibid.: 1244). For instance, example (120) can be paraphrased as *You are not the person I was looking for*. Relative pronouns in nominal relative clauses are therefore non-anaphoric. Moreover, other forms such as *what*, *whoever*, *whichever* and *whatever* occur in nominal relative clauses. Quirk et al. (2012) describe these items as follows: “[the] *wh*-element is merged with its antecedent (the phrase to which the *wh*-element refers)” (ibid.: 1056). They could be paraphrased with *that which* in the case of *what* and *that who/which/what* in the other cases respectively (example (121)). The second element of the paraphrase refers to the first, namely *that*, which is non-anaphoric. Thus, such constructions are not relevant here. Moreover, the items *whoever*, *whichever* and *whatever* are particularly found in speech. *Whoever* is avoided in formal contexts and is instead paraphrased with *he who*. These items are again not relevant for anaphoricity (cf. Quirk et al. 2012: 1056-1059, 1244-1245, 1260-1262).

- (119) **The earthquake caused the shed to collapse**, which means we need to clean it up now.
 (120) You are not *who* I was looking for.
 (121) Do *what* he tells you!

3.4.3 Further non-anaphoric uses

Apart from the distinctions above, other non-anaphoric situations should not be forgotten. For example, *wh*-relative pronouns have to be differentiated from interrogative pronouns. An interrogative pronoun is found in (122). In addition, determinative *which* usually does not work as anaphor (example (123)). Anaphoricity is more debateable in example (124), although such cases are also considered being non-anaphoric here. The reason is that the antecedent is too implicit and an acceptable antecedent such as *if it is cheap* would need a certain amount of paraphrasing. Such paraphrasing is then dependent on the context i.e. different instances of determinative *which* would need different types of

paraphrasing (cf. Carter & McCarthy 2006: 392; Huddleston, Pullum & Peterson 2010: 421-422; Quirk et al. 2012: 365, 368). Another non-anaphoric case with *which* is when it is postmodified by an *of*-phrase, e.g. *which of them* (cf. Payne & Huddleston 2010: 413).

- (122) *Who* helped us repair the heater?
- (123) He does not know *which* song to choose from.
- (124) It could be cheap, in *which* case you should buy it.

Finally, there are two more uses that are not considered anaphoric here. First, *that* also occurs as independent demonstrative pronoun, which means that relative *that* (example (117)) has to be distinguished from demonstrative use (e.g. example (108)). *That* as independent demonstrative pronoun does not belong to the relative pronoun category. Second, relative pronouns are not regarded as anaphors if they refer to an antecedent that is non-anaphoric. This is the case in example (38), which is *He who dares wins*. It contains *who* as relative pronoun referring to non-anaphoric *he*.

3.4.4 Gender and case

As to their grammatical features, all relative pronouns except *that* distinguish between forms for gender, but not for number or person. Gender involves the distinction between forms for personal use and forms for nonpersonal use. *Who* and *whom* are personal forms, *which* is nonpersonal. The distinction between personal and nonpersonal use can also be found with collective nouns, such as *government*. If these are understood as a group of individuals, *who* is used, otherwise *which* (cf. Quirk et al. 2012: 316-317, 771, 1260). *Whose* shows personal and nonpersonal use. Although *whose* is found with nonpersonal reference, the personal use is more common. Moreover, if an antecedent is coordinated with personal and nonpersonal nouns, the sequence determines whether *who* or *which* is chosen: it then depends on the gender of the last noun (example (125)) (cf. Huddleston, Pullum & Peterson 2010: 1048-1049; Quirk et al. 2012: 1245).

Additionally, there are other circumstances that define gender. For instance, *who* and *whom* can refer to antecedents that are animals, especially pets, or supernatural beings on the one hand. Such a use then implies more

emotional involvement.¹⁸ On the other hand *which* can be used for children, and implies emotional distance, which is similar to personal pronouns. Furthermore, *which* is found in two special constructions where it also refers to antecedents that are human beings. One such construction is illustrated in (126), in which the antecedent functions as subject complement with the verb *be*. The other is found with *have* (*got*), as in example (127), where the antecedent is the direct object of *have*.¹⁹ In such cases, relative pronouns are not coreferential but substitutional (cf. Huddleston, Pullum & Peterson 2010: 1048-1049; Quirk et al. 2012: 1245).

(125) He mentioned **his family and the cats** of which he was fond.

(126) They say that he was **the best worker**, which he surely was.

(127) They have **domestic servants**, which we do not have.

Apart from gender, relative pronouns distinguish between forms of case. The forms in subjective case are *who* and *which*, in objective case *whom* and *which* and in genitive case *whose*. The item *whose* occurs as possessive determiner of noun phrases. Moreover, *whom* is restricted to formal use. *Who* occurs in place of *whom* in informal contexts (cf. Carter & McCarthy 2006: 387; Quirk et al. 2012: 366-368, 1249-1250, 1252).

There are further forms in restrictive clauses, but not in nonrestrictive ones. For instance, *that* can be used instead of the *wh*-forms in subjective and objective cases, but it is more informal. An example is (117), in which the objective relative pronoun *that* can be substituted by *which*. Furthermore, *that* can work as neutral form that does not distinguish between personal and nonpersonal entities. In addition, the relative pronoun at the beginning of relative clauses can be left out in objective cases, as in example (128). More informal contexts generally show a preference for leaving out the relative pronoun here. The division into restrictive and non-restrictive and their forms that distinguish between case and gender are shown in Table 11 (cf. Carter & McCarthy 2006: 387; Quirk et al. 2012: 366-368, 1249-1250, 1252).

(128) **The meeting** Ø I attended yesterday ended at 4 p.m.

¹⁸ In contexts where the personal pronoun *she* refers to ship, for instance, the relative pronoun *which* has to be used for that antecedent. *Who* is not found in such contexts (cf. Quirk et al. 2012: 1245).

¹⁹ Huddleston, Pullum & Peterson (2010: 1049) do not speak of “direct object”, but “complement” in the sense of the distinction between “complement” versus “adjunct” (cf. Huddleston 2010b: 219).

Table 11: Relative pronouns

Case	Gender	Restrictive		Nonrestrictive	
		Personal	Nonpersonal	Personal	Nonpersonal
Subjective		<i>who / that</i>	<i>which / that</i>	<i>who</i>	<i>which</i>
Objective		<i>whom / that / ∅</i>	<i>which / that / ∅</i>	<i>whom</i>	
Genitive		<i>whose</i>		<i>whose</i>	

3.4.5 Summary

Relative pronoun forms distinguish between gender and case. Their form also depends on whether relative pronouns occur in restrictive or nonrestrictive clauses. Relative pronouns are usually anaphoric, and as Huddleston, Pullum & Peterson (2010) state “the anaphoric relation is an essential feature of the construction” (ibid.: 1036). Relative pronouns frequently refer to the preceding noun or noun phrase, or, in the case of *which*, also to a preceding clause or proper name. However, some non-anaphoric uses of relative pronoun items are possible. If items occur in appositive clauses or work as interrogative pronouns, they are not regarded as anaphors. Furthermore, relative pronouns are ignored if they refer to an antecedent that is non-anaphoric or if *that* is a demonstrative pronoun.

Finally, relative pronouns are mostly coreferential and show reduction. If referring to a clause, relative pronouns are not coreferential but belong to the miscellaneous category. Relative pronouns are substitutional if they are subject complements of the verb *be* or direct objects of the verb *have* (*got*). They cannot be used cataphorically. An overview is given in Tables 12 and 13.

Table 12: Anaphoric use of relative pronouns

	Clause type		Sentential relative	Anaphor		Antecedent	
	Adnominal relative			Deter- miner	Pronoun as such	Per- sonal	Non- per- sonal
	Restrictive	Nonrestrictive					
<i>who</i>	x	x	-	-	x	x	x ²
<i>whom</i>	x	x	-	-	x	x	x ²
<i>which</i>	x	x	x	(x)	x	x ¹	x
<i>whose</i>	x	x	-	x	-	x	x
<i>that</i>	x	-	-	-	x	x	x
<i>zero that</i>	x	-	-	-	x	x	x

¹ Only with emotional distance, e.g. in science; as subject complement of *be* and direct object of *have* (*got*); in coordination with a personal entity

² Only with higher animals and supernatural beings; in coordination with a nonpersonal entity

Table 13: Non-anaphoric use of relative pronouns

	Clause type		Form		Postmodifi- cation by an <i>of</i> -phrase	Reference to non- anaphoric items
	Nominal relative	Appositive clause (→ conjunction)	Interroga- tive pro- noun	Independent demon- strative		
<i>who</i>	x	-	x	-	-	x
<i>whom</i>	x ¹	-	x	-	-	x
<i>which</i>	x ¹	-	x	-	x	x
<i>whose</i>	-	-	x	-	-	x
<i>that</i>	(x) ²	x	-	x	-	x
<i>zero that</i>	-	-	-	-	-	x

¹ Only with verbs such as *like*, *choose*, *please*, *want*, *wish*, e.g. *You can marry whom you want*.

² Only in the constructions *that which/who/what*

3.5 Adverbs

The items that belong to this category are: *here*, *there*, *then*, *where*, *when*, *while* and *why*.²⁰ *Here* and *there* usually denote spatial, *then* temporal orientation. The four *wh*-items are relative adverbs with *where* for local, *when* and *while* for temporal, and *why* for causal relations.²¹ As to the relationship between anaphor and antecedent, the adverbs listed here usually show coreference (Quirk et al. 2012: 864-867). Each of these adverbs will now be considered in more detail.

3.5.1 *Here* and *there*

In comparison to demonstrative pronouns, Stirling & Huddleston (2010) characterise *here* and *there* as follows: “*here* and *there* are distinguished as proximal

²⁰ Similar to *whoever* and other items in 3.4, some items of adverbs combine with *-ever*, i.e. *wherever* and *whenever* (cf. Huddleston, Pullum & Peterson 2010: 1074).

²¹ *The Cambridge Grammar of the English Language* (Huddleston, Pullum & Peterson 2010: 1050-1052) regards only *why* as adverb, the other *wh*-items are classified as prepositions. Here, however, traditional grammar (e.g. Quirk et al. 2012: 865, 1253-1254) is given precedence.

and distal, like the demonstratives **this** and **that** respectively” (ibid.: 1549). *Here* and *there* mostly denote spatial location and so differ in whether the speaker perceives a place as near or distant, but they can also be used temporally with a near-distant contrast. In the first case, they are anaphoric, e.g. in (129). In the latter case, they are non-anaphoric, e.g. as *there* in (130). Here, *there* is interpreted as being distant in a temporal sense, meaning “at that point (of our discussion)”.

In general, *here* is mainly deictic and occurs anaphorically only in some situations (e.g. in example (131)). Furthermore, *here* as well as *there* often show both anaphoric and deictic reference at the same time (cf. Stirling & Huddleston 2010: 1549-1550). Stirling & Huddleston (2010) explain why examples such as (129) are not purely anaphoric: “*There* [...], though primarily anaphoric, retains a distal deictic component of meaning, for it still indicates a place relatively removed from where I am now” (ibid.: 1550).

Apart from deictic occurrence, *here* and *there* show further non-anaphoric uses. The adverb *there* has to be differentiated from existential *there*, which does not refer to an entity but is required grammatically as a pronoun. In this use, *there* has no further semantic content but postpones information to a non-initial position in the sentence, similarly to *it*. Hence, example (132) a) could be paraphrased with (132) b) (cf. Carter & McCarthy 2006: 392, 789; Quirk et al. 2012: 89). Furthermore, *here* can be a noun, and both *here* and *there* can be interjections, for instance in (133) (cf. “Here” n.d.; Summers 2006: 656, 1440-1441).

As to the antecedents of *here* and *there*, the following observations are noteworthy. If the expression to which the anaphor refers contains a preposition, the antecedent usually includes this preposition (see example (134)). If the anaphor is preceded by a preposition, the antecedent constitutes the expression without the preposition (example (129)). In case neither the anaphor nor the antecedent incorporates a preposition, the preposition is understood as being of a non-special kind, such as *at* or *in*. For instance, (131) implies the preposition *at* (cf. Stirling & Huddleston 2010: 1550).

Finally, *here* can be used cataphorically. It is the only item in this category of adverbs where a cataphoric interpretation is common (example (135)). As the antecedent is a clause, no coreferential relationship is established but this item then belongs to the miscellaneous category (cf. Halliday & Hasan 2008: 68, 75).

(129) Dad was in **London**. He came back from there yesterday.

(130) He stopped *there* and said he would continue next time.

- (131) **The new open-air swimming-pool** opened two days ago. Here, many people will go swimming during the summer months.
- (132) a) *There* is still plenty of time left.
b) Plenty of time is still left.
- (133) *There!* Was that what you wanted?
- (134) She spent her holidays **in Cornwall**. She got to know plenty of nice people there.
- (135) Here is the plan: **we will rent a car and drive to Birmingham**.

3.5.2 *Now and then*

Generally, *now* and *then* behave similarly to *here* and *there*. To quote Stirling & Huddleston (2010):

Proximal *now* and distal *then* are the temporal counterparts of spatial *here* and *there* respectively. *Now* is predominantly deictic while *then*, in its temporal sense, is usually anaphoric. (ibid.: 1558)

The distinction between near and more distant time is expressed through the contrast of *now* and *then*. Example (136) is a fine illustration of deictic *now*. Stirling & Huddleston (2010: 1558-1559) give no example of anaphoric *now*, and also Quirk et al. (2012: 865) mention only *then* but not *now* in their list of coreferential and substitutional items. Moreover, Halliday & Hasan (2008) concede that “*now* is very rarely cohesive” (ibid.: 74). Consequently, *now* is not considered as anaphor here. The item *then*, if used anaphorically, refers to a time and typically takes a prepositional phrase as antecedent (example (137)).

Then also shows some non-anaphoric uses. To begin with, *then* is non-anaphoric if it points to a preceding clause, to the time this clause expresses, or to the time that comes shortly after what was mentioned. Example (138) contains a non-anaphoric *then*, which refers to the time shortly after he baked a cake. Yet, Stirling & Huddleston (2010: 1559) regard such uses as anaphors. As *then* serves to denote a temporal sequence, similar to items such as *next*, *subsequently* and *after that*, and as the antecedent lacks explicitness, which has been defined to be one essential criterion for anaphors here, these expressions are not considered anaphors (cf. Halliday & Hasan 2008: 261). Moreover, *then* is also non-anaphoric if it can be paraphrased with *also* or *besides* (example (139)) (cf. Summers 2006: 1440). Halliday & Hasan (2008: 74) speak of “conjunction *then*” in such instances. Finally, *then* can be used deictically if it refers to the time that is evident from the situation. Example (140) makes sense if, for in-

stance, looking at photos of the childhood (cf. Stirling & Huddleston 2010: 1559).

A further non-anaphoric case is if adjective *then* occurs as modifier (example (141)) (cf. Summers 2006: 1440). Stirling & Huddleston (2010: 1559) again classify such instances as anaphoric. Here, however, such cases are not seen as anaphors because the anaphoric link of *then* is too unspecific, i.e. not explicit enough to be relevant. Stirling & Huddleston (2010) argue in these contexts that “[t]he reference [...] is to the time of the situation expressed in the clause containing *then*” (ibid.: 1559). For instance, *then* in (141) points to the verb *congratulated*, which is in the past tense. As a result, *then* would refer to the past in this example without establishing references to explicit antecedents (cf. ibid.: 1558-1559).

- (136) The tea is *now* ready.
- (137) Susan married **in 1919**. She was 30 years old back then.
- (138) He baked a cake and *then* he tried it.
- (139) *Then*, what did you do?
- (140) We were not used to staying up late back *then*.
- (141) The staff congratulated the *then* president.

3.5.3 *Where, when, while and why*

The item *where* is an expression for spatial location (example (142) a)). It can also be paraphrased by *in which* in (142) b) and, in this case, would belong to the relative pronoun category. *When* and *while* are used for temporal reference. *While* is used if the reference is to a period of time (example (143)), and can be replaced by *when*, *during which (time)* or *in which (time)*. *When* typically refers to a point in time (example (144)) and also occurs as complement of a temporal preposition, i.e. *since when*, *until when*, *from when* and *by when*. Moreover, it can sometimes be replaced by a preposition plus *which*, e.g. *during which*. Which preposition is used here depends on the context. To give an example, *on which* can replace *when* in (144). Finally, *why* refers to causal expressions (example (145)), where the antecedent mostly involves *reason*. Therefore, *why* is only of limited importance here. It can also be replaced by *for which*, but this use is quite rare (cf. Huddleston, Pullum & Peterson 2010: 1050-1051; Quirk et al. 2012: 1119-1120, 1253-1254).

In addition, the forms listed here have to be differentiated from their non-anaphoric uses. *Where*, *when*, *while* and *why* occur as interrogative pronouns

and are then not anaphoric. This is in analogy to the *wh*-forms of relative pronouns, which also have to be distinguished from uses as interrogative pronouns. Moreover, *wh*-elements are non-anaphoric as conjunctions in adverbials and nominal relative clauses²² (example (146)). Furthermore, *where*, *when*, *while* and *why* occur non-anaphorically as nouns. *While* can furthermore be a non-anaphoric verb, and *why* can occur as a non-anaphoric interjection (example (147)) (cf. “Where” n.d.; Summers 2006: 1569-1570, 1574). Furthermore, the *wh*-items can also be merged with their antecedent, especially in the case of *why* (cf. Quirk et al. 2012: 1053-1059). Example (145) would then read *Why she came was my birthday*. Such instances have to be distinguished from anaphoric uses. Quirk et al. (2012) state:

Many speakers find their use [i.e. the use of these *wh*-forms] along with the corresponding antecedent somewhat tautologous – especially the type *the reason why* – and prefer the *wh*-clause without antecedent, i.e. a nominal relative clause [...]. (ibid.: 1254)

Additionally, it should be mentioned that the four *wh*-items as adverbs are supplemented by other forms: *whence* and the compounds of *where* plus a preposition, i.e. *whereby*, *wherein* and *whereupon*.²³ The item *whence* (example (148)) is used to denote a relation to a spatial or logical origin and can be replaced by *from which*. *Whence* is archaic, although it can occur in journalism. From the *where*-compounds, only *whereby* (example (149)), and marginally *wherein* and *whereupon*, are still used; other forms such as *wherefrom* are archaic. The three forms *whereby*, *wherein* and *whereupon* are equivalent to *by which*, *in which* and *immediately after which/as a result of which* respectively. All these items can work as anaphors, as the examples below demonstrate. *Whereby*, *whereupon*, and *whence* can also take a clause as antecedent. Due to their restricted use, they are not given much attention here (cf. Summers 2006: 1569; Huddleston, Pullum & Peterson 2010: 1046, 1050-1052).

- (142) a) He lives **in the house** where my parents used to live.
 b) He lives in the house in which my parents used to live.
- (143) **From the beginning of May until the end of October**, while the sun is still shining, the park will be open to visitors.
- (144) **It occurred on Friday** when he was at home all by himself.
- (145) That is **the reason** why she came to my birthday.

²² Quirk et al. (2012: 442-444) argue that the *wh*-forms in these uses are not pure conjunctions.

²³ Although *whereupon* is a conjunction, it is listed here because it is a compound involving *where* (cf. Summers 2006: 1569; Quirk et al. 2012: 998).

- (146) She does not know *when* the train arrives.
 (147) *Why*, he does not know that.
 (148) The kitchen is situated next to **the hall**, whence they heard voices.
 (149) **The order** whereby we should leave at once reached us yesterday.

3.5.4 Summary

The adverbs *here*, *there* and *then* can all occur as anaphors; they are reductive forms. With regard to the *wh*-forms, *where* and *when* are the two most significant forms, followed by *while* and *why*. *Whence*, *whereby*, *wherein* and *whereupon* are only rudimentarily important. All these items usually show coreference. If the antecedent is a clause or sentence, they belong to the miscellaneous category. Only *here* can take a cataphoric interpretation from these items.

Moreover, the adverbs listed here have to be distinguished from non-anaphoric uses. First, *here*, *there* and *then* can be deictic. Second, *there* is non-anaphoric as existential *there*. Third, *then* is not anaphoric if denoting a temporal sequence or if it can be paraphrased with *also* and similar expressions. Fourth, *here*, *there* and *why* also occur as interjections. Fifth, the *wh*-items have to be differentiated from their interrogative uses, from uses as conjunctions, and, especially in the case of *why*, from forms where the relative adverb is merged with the antecedent. An overview of these features is given in Tables 14 and 15.

Table 14: Anaphoric use of adverbs

	Sense			Distance		Antecedent is clause	Cataphor
	Place	Time	Cause	Proximal	Distal		
<i>here</i>	x	x	-	x	-	x	x
<i>there</i>	x	x	-	-	x	-	-
<i>then</i>	-	x	-	-	x	-	-
<i>where</i>	x	-	-	-	-	-	-
<i>when</i>	-	x	-	-	-	-	-
<i>while</i>	-	x	-	-	-	-	-
<i>why</i>	-	-	x	-	-	-	-
<i>whence</i>	x	-	(x) ¹	-	-	x	-
<i>whereby</i>	-	-	-	-	-	x	-
<i>wherein</i>	-	-	-	-	-	-	-
<i>whereupon</i>	-	x	x	-	-	x	-

¹ i.e. logic

3.6 Noun phrases with a definite article

Noun phrases with a definite article are not such typical anaphors as personal pronouns are, for instance.²⁴ As linguistic works on anaphors often focus on pro-forms, noun phrases are not considered. As a result, authors such as Stirling & Huddleston (2010) do not discuss anaphoric noun phrases. There are, however, good reasons to consider noun phrases with *the* as one type of anaphor. First, the definite article signals that the entity referred to by this noun phrase was mentioned before or is otherwise contextually clear to the addresser and addressee. Quirk et al. (2012) argue:

The definite article *the* is used to mark the phrase it introduces as definite, *ie* as ‘referring to something which can be identified uniquely in the contextual or general knowledge shared by speaker and hearer’. The ‘something’ referred to may be any kind of noun phrase referent [...]. (ibid.: 265-266)

Indefinite articles are then used to show that a new idea is brought up. Quirk et al. (2012) explain in more detail:

a/an X will be used where the reference of *X* is not uniquely identifiable in the shared knowledge of speaker and hearer. Hence *a/an* is typically used when the referent has not been mentioned before, and is assumed to be unfamiliar to the speaker or hearer [...]. (ibid.: 272)

Furthermore, Biber et al. (2007) formulate that the definite article

specifies that the referent of the noun phrase is assumed to be known to the speaker and the addressee. The knowledge could be based on the preceding text, in which case we speak of **anaphoric reference** [...]. In many cases, though, the connection is inferred rather than signalled by repetition, and we speak of **indirect anaphoric reference** [...]. (ibid.: 263)

Thus, noun phrases with a definite article can show anaphoricity and so are a type of anaphor (see also Hoffmann 2012: 78-80; Schubert forthcoming). Moreover, anaphora resolution systems, e.g. Vieira & Poesio (2000) or Markert & Nissim (2005), also deal with noun phrases with *the* as anaphors.

²⁴ Yet, Lemnitzer & Zinsmeister (2010) count noun phrases with definite articles to prototypical types of anaphors: “Prototypische Beispiele für Anaphern sind Pronomen oder definite Nominalphrasen” (ibid.: 85).

3.6.1 Syntactic characteristics

Noun phrases have a head, which is the central element of noun phrases and which is in most cases preceded by a determinative. For instance, the noun phrase *the report* has the head *report* and the determinative *the*. In addition, noun phrases can be modified, either before the head as premodifier or after the head as postmodifier. The example *the recent report of the project* contains the premodifier *recent* and the postmodifier *of the project* (cf. Aarts & Aarts 1986: 60-63).

What is important for the discussion here is how the determinative and the head are realised. First, the definite article, the indefinite article, possessive pronouns and demonstrative pronouns, for instance, can work as determinative. The result is an indefinite noun phrase in the case of an indefinite article or a definite noun phrase with a definite article, a possessive or a demonstrative determiner. The noun phrases discussed in this category are all definite, and the determinative has to be realised as definite article. Apart from the determinative, the head can also show different realisations. Usually, the head is a noun, as *report* in the above example, or pronoun, as in the noun phrase *he*. In addition, the head can be realised by an adjective, as in *the English*, a participle, as *the affected* and *the defending*, or by a numeral, e.g. in *the two* (cf. Aarts & Aarts 1986: 104-108; Quirk et al. 2012: 863).

Contrary to many papers and books concerning anaphora resolution (e.g. Muñoz, Palomar & Ferrández 2000: 527; Vieira & Poesio 2000: 539; Mitkov 2002: 112-113) and books about natural language processing (e.g. Allen 1995: 359, 440-445), the term “definite descriptions” for anaphoric noun phrases with a definite article is not used here. The term “definite descriptions” also denotes expressions that do not contain a definite article, such as proper nouns (cf. Vater 2005: 108).

3.6.2 Anaphoric/cataphoric and non-anaphoric use

Two subtypes of references can be distinguished if noun phrases with a definite article are used anaphorically. Such noun phrases have either direct or indirect reference to the antecedent. With direct reference, the anaphor and the antecedent have the same head. A good example of direct reference is (150). In addition, this example serves as illustration for an anaphor that takes the definite article, and its antecedent taking the indefinite article because the entity is introduced. Indirect reference means that anaphor and antecedent do not share

the same head, as in example (151), in which *the engine* refers to *car*. Quirk et al. (2012) explain:

INDIRECT ANAPHORA arises when a reference becomes part of the hearer's knowledge indirectly, not by direct mention [...], but by inference from what has already been mentioned [...]. (ibid.: 267)

Furthermore, Halliday & Hasan (2008) argue that the most obvious anaphoric noun phrases with a definite article are “those in which the item is actually repeated” (ibid.: 72), but there are others that avoid repetition and “add lexical variation” (Quirk et al. 2012: 1465), as in example (152).²⁵ Possible sense relations between anaphor and antecedent in indirect reference are synonymy, hyponymy/hypernymy or meronymy. World knowledge is needed to identify the antecedent in such instances. Example (152) shows hypernymy with *animal* as hypernym of *dog* (cf. Halliday & Hasan 2008: 274-279; Quirk et al. 2012: 860, 1464-1466).

(150) Toby has **a cat** and a dog. The cat is called “Molly”.

(151) He went by **car**. After a while, the engine broke down.

(152) Mandy has **a dog**. Her husband does not like the animal.

Quirk et al. (2012: 268-269) argue that certain noun phrases with *the* take a cataphoric interpretation. If a noun phrase is postmodified, this postmodification is the cataphor. As postmodifications belong to noun phrases, these instances are not seen as cataphors here. Even Quirk et al. (2012: 268-269) concede that noun phrases with postmodifications are not truly cataphoric, as an alternative formulation, i.e. paraphrasing, is often possible. Example (153) a) shows cataphoric interpretation in Quirk et al.'s sense because *of Sandy* postmodifies and therefore specifies *the cat*. In (153) b) the paraphrasing is given. Other cataphoric interpretations of noun phrases with a definite article are not possible. At this point Halliday and Hasan (2008) stress:

Cataphoric or forward reference, with *the*, is limited to the structural type. Unlike the selective demonstratives (*this*, *these* and *here*), *the* can never refer forward cohesively. It can only refer to a modifying element within the same nominal group as itself. (ibid.: 72)

²⁵ It should be noted that the discourse deictic items *the former* and *the latter* belong to this anaphor type as well (cf. Huddleston 2010c: 1163; Stirling & Huddleston 2010: 1555-1556; Quirk et al. 2012: 1465).

Additionally, no cataphor arises if a noun phrase anaphor and its antecedent are reversed. For example, in (154) an anaphoric proper name is coined by the inversion of anaphor and antecedent (cf. Halliday & Hasan 2008: 17).

- (153) a) *The cat* of Sandy } has fleas.
 b) Sandy's cat }

(154) **Betty** repaired the lamp. The girl is only twelve years old.

Noun phrases with a definite article can also be used deictically. For instance, a definite article can occur with noun phrases to refer to the situation (from the surrounding, immediate context to the larger context). Such a use involves general knowledge and does not depend on a specific situation. People then know from their experience to what entity such expressions refer. Pertinent examples are found in (155), which contains two noun phrases with a larger situational reference (cf. Biber et al. 2007: 265-266; Quirk et al. 2012: 266-272).

In addition, we find other non-anaphoric uses. To start with, noun phrases occur with definite article if certain words, e.g. superlative adjectives such as *best* in *the best film*, or ordinals such as *first* are present. Moreover, *the* can show what Quirk et al. (2012: 269) term “sporadic reference”. By that they mean noun phrases referring to institutions. They also include related expressions such as those of mass communication and transport, e.g. *the news*. Furthermore, *the* usually accompanies expressions of body parts after prepositions, such as in example (156). Finally, *the* can also occur in generic use. Generic use with singular noun phrases is rather restricted. Examples can be found with musical instruments, such as *play the guitar*. With regard to plural noun phrases, two applications are distinguished: phrases denoting the nationality of people such as *the English*; and other phrases with an adjective as head and which refer to a group as a whole, such as *the rich* (cf. Biber et al. 2007: 265-266; Halliday & Hasan 2008: 70-71; Quirk et al. 2012: 266-272, 282-285).

(155) *The sky* turned red as *the sun* set.

(156) Sue has a tattoo on *the shoulder*.

3.6.3 The relationship between anaphor and antecedent

Noun phrases with *the* are usually coreferential, except for those anaphoric cases that refer to a clause or sentence as antecedent (cf. Halliday & Hasan 2008: 281-282, 304-305; Quirk et al. 2012: 267). Quirk et al. (2012), for example,

argue: “Coreference is a general feature of definite noun phrases” (ibid.: 865). Furthermore, noun phrases with *the* are cohesive devices and show lexical cohesion (cf. Halliday & Hasan 2008: 72, 281-282, 304-305; Esser 2009: 14, 42; Quirk et al. 2012: 267). This is different from the items discussed previously, which mostly belong to grammatical cohesion, except for demonstrative pronouns in dependent use (cf. Carter & McCarthy 2006: 245; Halliday & Hasan 2008: 275). As a result, noun phrases with a definite article are different from pronouns in this point because not so much value lies on grammar but on content, for instance. This feature is also important for resolving noun phrase anaphors. Finally, noun phrases with a definite article do not necessarily show reduction. With the exception of repetitions, noun phrases are predominantly used to avoid the same expression and to contribute to variation in utterances (Vater 2005: 47).

3.6.4 Summary

Noun phrases with a definite article can be anaphorically linked to the antecedent directly or indirectly. Noun phrases with *the* show no cataphoric interpretation and are usually coreferential. A number of instances can be listed where noun phrases with a definite article are not anaphoric and so have to be distinguished from anaphoric ones. The anaphoric and non-anaphoric features are illustrated in Tables 16 and 17.

Table 16: Anaphoric/cataphoric use of noun phrases with *the*

	Anaphoric				Cataphoric
	Same head	Different head			
		Synonymy	Hyponymy/ hypernymy	Meronymy	
<i>the</i> with direct reference	x	-	-	-	-
<i>the</i> with indirect reference	-	x	x	x	-

Table 17: Non-anaphoric use of noun phrases with *the*

	Non-anaphoric				
	Deixis	Superlative adjectives	Sporadic reference	Body parts	Generic
<i>the</i>	x	x	x	x	x

3.7 Proper names

The category of proper names is not a prototypical type of anaphor either. This, for instance, gets obvious when consulting Quirk et al. (2012: 288-297) who do not mention any anaphoric relations with proper names. In the same way, Stirling & Huddleston (2010) do not treat them in their chapter about deixis and anaphora. There are, however, scholars who recognise the anaphoric value of proper names. For example, Halliday & Hasan (2008: 19) speak of an “implicitly anaphoric” relationship if a proper name refers to a preceding proper name in the same form. Example (157) contains the proper name *Betty*, and the second occurrence of it establishes a cohesive link to the first-mentioned item. More importantly, however, are relations where anaphor and antecedent take different forms, but denote the same entity (example (158)). Furthermore, Huang (2000), for instance, also lists proper names, or “names” as he calls them, as one type of anaphor: “Linguistic elements that can be employed as an anaphor include gaps (or empty categories), pronouns, reflexives, names and descriptions” (ibid.: 1).

(157) Betty asked me if you were going swimming today. You could call *Betty* and tell her about your plans.

(158) **Bob Harris** is at a meeting in Berlin today. In urgent cases you can call the secretary there – just ask for Mr Harris.

3.7.1 Proper names and proper nouns

The term “proper name” needs to be distinguished from “proper noun”. A proper noun is a single word that usually functions as the head of a proper name, such as in *Great Britain* where *Britain* is the head and so the proper noun. Other examples, such as *University of Passau*, contain *University* as head, but this is a common noun and not a proper noun. This means that proper names can but need not necessarily include proper nouns. A proper noun commonly begins with a capital letter, and the words further describing the proper noun are typically also capitalised. A good example is provided by the proper name *Professor Miller* where the descriptive element *Professor* has an initial capital letter (cf. Halliday & Hasan 2008: 42-43; Quirk et al. 2012: 288, 1637-1638).

Not all words in capital letters are proper names, though. For example, sentences begin with capital letters. Moreover, the item *God* and expressions referring to God are in capital letters. Additionally, capital letters are found in abbreviations.

viations, also in those that are not proper nouns such as *PTO* for “Please turn over the page”. These have to be differentiated from capitals marking proper nouns and names (cf. *ibid.*: 288, 1637-1638).

3.7.2 Syntactic features

Most proper names are noun phrases. Their head has, however, peculiar grammatical features because they frequently show no number contrast: Proper nouns are either singular or plural, which means that singular items do not have a plural form and vice versa. One important exception is if the surname denotes the whole family. For instance, the singular form and surname *Brown* then turns into the plural *the Browns* (cf. Payne & Huddleston 2010: 516, 519-520; Quirk et al. 2012: 288-290).

Different classes can be distinguished with proper names. Quirk et al. (2012: 290-294) list personal, temporal, geographic and other locative names as the main categories. All of these can work anaphorically. Personal names can consist of first name (e.g. *Betty*) or surname (e.g. *Smith*) alone, or of both first name and surname (e.g. *Betty Smith*). First names can also be written as initials (e.g. *B. Smith*). Additionally, first and/or surnames can be accompanied by titles, such as *Ms*, *President*, *Dr* (e.g. *Dr Betty Smith*). Furthermore, temporal names include names of days of the week (e.g. *Sunday*) and of festivals (e.g. *Christmas*), for example. Geographical names cover names of continents (e.g. *Europe*), countries (e.g. *Germany*), towns (e.g. *Passau*), lakes (e.g. *Lake Michigan*), mountains (e.g. *Mount Everest*). Other locative names consist of a proper noun and a descriptive element, such as *river*, *street* and *airport* (e.g. *Hyde Park*). Of course other proper names, such as for newspapers (e.g. *The Times*) occur as well (cf. Glück 2010: 169-170; Payne & Huddleston 2010: 515-518; see also Biber et al. 2007: 245-247).

3.7.3 Anaphoric and non-anaphoric use

Proper nouns are mostly definite, at least as anaphors they have to occur so. Furthermore, if a proper name is anaphoric, it often refers to another proper name, or to a noun phrase with a definite article. If a proper name refers to another proper name, only those instances are regarded as anaphoric relationships, where the two items are not completely identical in form, except for cases where the antecedent is an anaphor itself. The aim to apply anaphora resolution

to text retrieval systems seems to justify such a procedure. Establishing links between different expressions is more valuable than examining whether two proper names with the same form are coreferential. Furthermore, the focus is not on coreference resolution but on anaphora resolution. This procedure in fact does not only apply to proper names, but to all other types of anaphors as well. As a result, example (157) does not contain an anaphor, but example (159) does. The second *Ms Smith* [2] in (159) refers anaphorically to the first *Ms Smith* [1], which is itself anaphorically related to *Betty Smith* (cf. Payne & Huddleston 2010: 520).

Furthermore, if a proper name refers anaphorically to an antecedent, this is always a coreferential relationship and constitutes lexical cohesion. To find out about if items are coreferential and therefore anaphors, world knowledge is often needed (example (160)). As proper names can be divided up into different classes, they also show meanings that are specific of the individual class. Such information is helpful in finding the antecedent, which has to share the same or a related meaning. For example, a temporal proper name is likely to have an antecedent that also denotes some type of temporal feature. Finally, a cataphoric reference is not possible with proper names. An inversion of a proper noun and its antecedent, usually a noun phrase, would instead constitute an anaphoric noun phrase with a definite article in most cases (cf. Halliday & Hasan 2008: 42-43; Payne & Huddleston 2010: 520).

Not every occurrence of a proper name is anaphoric, even if it is definite. Contrary to a large number of definite noun phrases that are introduced the first time by a noun phrase with an indefinite article, there is no need for proper names to be introduced. For instance, the first-mentioned proper names at the beginning of examples (157), (158) and (159) are all non-anaphoric. Furthermore, if two proper names have the same form, this does not automatically imply that they denote the same person or entity. Consider example (161) where the conjunction *therefore* signals that the two items are not coreferential (cf. Halliday & Hasan 2008: 281).

- (159) **Melanie Smith** has written a book and had it published recently. I am sure that **Ms Smith** [1] will be more successful than Toby Clark. **Ms Smith** [2] is the better author of the two.
- (160) Isabel likes **her new English teacher**. **Mr Kennedy** is from Reading.
- (161) Linda arrived in London last night. Therefore, *Linda* has to prepare the guest bed.

3.7.4 Summary

The distinction between anaphoric and non-anaphoric proper names depends on the surrounding text and is not inherent of an expression. A cataphoric interpretation of proper names is not possible. Anaphoric proper names are coreferential and cohesive (cf. Kübler n.d.: 7). Finally, proper names are not primarily used for reduction but for variation, as is the case with noun phrases with a definite article.

3.8 Indefinite pronouns

The items that belong to indefinite pronouns are *one(s)*, *other(s)*, *another*, *both*, *all*, *each*, *enough*, *several*, *some*, *any*, *either*, *neither*, *none*, *many* & *much/more/most*, *few/fewer/fewest*, *little/less/least* (cf. Stirling & Huddleston 2010: 1512; Quirk et al. 2012: 377, 865, 870-871). *Every* is not included because it is a determiner and cannot work as a pronoun itself (cf. Quirk et al. 2012: 377, 381-383). Additionally, cardinal and ordinal numbers working as indefinite pronouns are not treated here. For instance, number (162) is seen as containing an ellipsis of *guest* after the expression *the second* (cf. Carter & McCarthy 2006: 390).²⁶

(162) The first **guest** arrived on time, the second ____ was ten minutes late.

In general, Quirk et al. (2012: 376) divide indefinite pronouns into two sub-categories: compound and *of*-pronouns. By compounds they understand indefinite pronouns consisting of two morphemes, the second being *-one*, *-body* or *-thing*. All others belong to the *of*-category because an *of*-phrase can follow, e.g. *few of the examples*. *Of*-pronouns show a substitutional relationship to antecedents, as Quirk et al. (2012) point out: “All the *of*-pronouns can be interpreted as substitutes” (ibid.: 380). They can take noun phrases or nominals as antecedents. *Of*-pronouns are therefore relevant when discussing anaphors; the compound pronouns are not anaphoric.

²⁶ Quirk et al. (2012: 376-392, 865) also list *half* with indefinite pronouns. However, this item is not included here but rather seen as a case of ellipsis (see chapter 3.11). If it belonged to this category, other forms such as *quarter* would have to be included in this class as well. The category would then expand endlessly. Moreover, Aarts & Aarts (1986: 58) do not add *half* or *quarter* to their category of quantifiers.

There are some more characteristics that unite indefinite *of*-pronouns. For instance, they are per definition indefinite, i.e. “[n]ot referring to, or indicating reference to, an identifiable individual or set of individuals” (Matthews 2007: 188). Their meaning can, however, also be definite if they are used together with definite elements, for example with a definite article, e.g. *the one*. Furthermore, indefinite pronouns have a quantitative meaning.

In addition, the fact that pronouns and determiners show close connections in their morphological form characterises all indefinite pronouns. For instance, the item *few* is a pronoun in the phrase *the last few* and works as a determinative in *a few examples*, but the morphological form is the same in both. Consequently, *of*-pronouns and their corresponding determiners are homomorphs, i.e. they share the same morphological form but take different syntactic functions, either as head or determinative of noun phrases. The only exception is *none*, which is always a pronoun (cf. Halliday & Hasan 2008: 42; Quirk et al. 2012: 70-71, 376, 871). As will become clear in the individual subchapters, most determinative uses of indefinite pronouns are non-anaphoric. All indefinite pronouns that can work anaphorically are now outlined in chapters 3.8.1 to 3.8.7, before some general non-anaphoric uses of these items, their cataphoric use and their status as elliptical forms are discussed.

3.8.1 *One and ones*

If *one* works as a substitute, it shows a singular (*one*) and a plural form (*ones*). It substitutes a whole phrase with a count noun as head (example (163)) or a nominal that is a count noun (example (164)).²⁷ If the antecedent is a whole noun phrase, only the singular form *one* can be used. The anaphor *one* then occurs as head of a noun phrase and does not have any determiners or modifiers. If the antecedent is head of a noun phrase only, both items *one* and *ones* can be used and have to be accompanied by a determiner and/or modifier, of which the latter is usually an adjective. However, *ones* needs not necessarily refer to a plural antecedent and *one* to a singular antecedent. A reference to a singular form with *ones* and plural form with *one* is possible in some cases (example (165)) (cf. Halliday & Hasan 2008: 91). Additionally, the expressions *that of* and *those of* are more usual than *one* and *ones* in formal English. A good illus-

²⁷ *One* is not used for non-count nouns. Instead, *some* is needed in such contexts, for example, *Would you like some more orange juice or do you already have some?* (cf. Carter & McCarthy 2006: 119; Quirk et al. 2012: 870).

tration is given in (166), with *those* and two alternatives with *ones*. Moreover, it is not common to use *one* as a cataphor (cf. Carter & McCarthy 2006: 119-120, 251; Biber et al. 2007: 357; Stirling & Huddleston 2010: 1511-1517; Quirk et al. 2012: 386-388, 869-870).

One working as a substitute has to be distinguished from non-anaphoric uses, such as numerical *one* and generic *one*. Numerical *one* occurs as determinative (e.g. *one book*) and head of a noun phrase (e.g. *one of the books*). Generic *one* is used in formal contexts to denote “people in general” (example (167)). If used specially with a definite article, *one* means “person” (example (168)). The forms of genitive *one’s* and reflexive *oneself* can be used generically as well. Generic *one* shows similarity to *you* and *they*, which are also used to stand for “people in general”. However, *one* also encompasses the speaker, which *you* and *they* do not do. In addition, *one* occurs in the split construction of reciprocal pronouns. But this was discussed in the chapter about reciprocal pronouns (chapter 3.2), so such cases are excluded in the examination of indefinite pronouns (cf. Stirling & Huddleston 2010: 1513-1516; Quirk et al. 2012: 386-388).

(163) I need **a pen**. Do you have one?

(164) I gave him a yellow **crayon**, but he wanted a green one.

(165) Do you like **apples** because I have a very sweet one for you.

(166) The **theories** of Bühler are as complex as { those of Chomsky.
the ones of Chomsky.
Chomsky’s ones.

(167) To be successful *one* has to work at lot.

(168) Paul is the *one* needed here.

3.8.2 *Other, others and another*

The item *other* is a singular form; the plural form is *others* (example (169)). The item *other* occurs as determiner, e.g. *two other reasons*, and pronoun. It is non-anaphoric as determiner. Furthermore, *others* is used non-anaphorically if it refers to “other people in general” (example (170)). Finally, *other* is found with reciprocal pronouns in the split construction, as illustrated in chapter 3.2. Therefore, the indefinite pronoun *other* needs to be distinguished from such reciprocal pronouns (cf. Stirling & Huddleston 2010: 1517-1518).

Closely connected to *other* is the item *another* because it can be regarded as a combination of *an* and *other*. *Another* can also be seen as an item of *of-*

pronouns (see, for example, Carter & McCarthy 2006: 390).²⁸ Its anaphoric use (example (171)) has to be distinguished from the reciprocal *one another* in split construction and from determinative use, in which it is non-anaphoric (cf. Payne & Huddleston 2010: 391; Quirk et al. 2012: 388-389).

(169) I have found some of the **documents**, but where are the others?

(170) You do not like cheese, but *others* do.

(171) I lost the **copy** you gave me. Could I have another?

3.8.3 *Both, all and each*

Both is used with plural count nouns or coordinated nouns if two entities are considered (example (172)). The non-anaphoric uses include *both* as determiner and postposed *both*. Postposed *both* occurs if *both* follows a noun phrase, as in example (173). The expression *the children both* can be reformulated by either *the two children* or *both children*. That is why such instances are not regarded as anaphors. *Both*, as well as *all* and *each*, can have split antecedents (cf. Halliday & Hasan 2008: 156-158).

The item *all* occurs in a similar context. It is used with plural count nouns or coordinated nouns, but now referring to more than two in number, as well as with non-count nouns (example (174)). *All* can also occur as determiner with singular count nouns but then it is non-anaphoric (example (175)). With *of* in example (175), *all* is a pronoun, without *of* it is the determiner of a noun phrase. Such a use, however, is not often encountered: “Before a singular count noun, however, *all* is somewhat formal, and is frequently replaced by a construction with *whole* as an adjective or noun” (Quirk et al. 2012: 381). The expression *all of the village* in example (175) would then read *the whole village* where *whole* is an adjective, or *the whole of the village* in which *whole* is a noun. Moreover, the cases in which *all* is non-anaphoric are the same as with *both*, regarding determinative and postposed uses. A further non-anaphoric use of the pronoun *all* is if it occurs in situations in which it has an equivalent meaning to *everything*. Thus, *everything* in example (176) can replace *all*. Finally, non-anaphoric *all* can

²⁸ Quirk et al. (2012: 379-380) do not list *other* and *another* with *of*-pronouns as substitutes first. They, however, include them in the detailed description of these pronouns (see *ibid.*: 388-389, 865). In addition, Carter & McCarthy (2006: 249-250) list them as substitutes with indefinite pronouns.

occur as modifier in the form of an adverb, as in example (177). In such a use it stands for “completely” (cf. Payne & Huddleston 2010: 377; Hornby 2010: 37).

In contrast to *both* and *all*, *each* is only found with singular count nouns, although the pronoun *each* can have a plural count noun or coordinated nouns denoting two people or things as antecedent (example (178)). The antecedent is then interpreted to substitute *each* in the singular. In example (178) the anaphor stands for *each boy*. The item *each* is used non-anaphorically in postposed position and if occurring determinatively or as modifier (cf. Payne & Huddleston 2010: 377; Quirk et al. 2012: 380-383, 870-872). *Both*, *all* and *each* in determinative function, however, can be anaphoric in contexts such as in (179).

- (172) The **boys** are already tired. Both got up early.
- (173) The children *both* like ice-cream.
- (174) We do not have any **butter** at home. Billy used all for the cake.
- (175) *All* (of) the village agree with you.
- (176) *All* is fine.
- (177) His marks are not *all* that bad.
- (178) When the two **boys** were asked to show their homework, each looked embarrassed at the teacher.
- (179) **Kareem and Nasim** visited us yesterday. Both children are really polite.

3.8.4 *Enough and several*

The item *enough* occurs as pronoun in its anaphoric use. It takes plural count nouns and non-count nouns (example (180)). Non-anaphorically, *enough* occurs as determiner and, in the form of an adverb standing for “to the necessary degree”, as modifier (example (181)). The item *several* is used with plural count nouns (example (182)). The item *several* is also non-anaphoric if it functions as determiner or modifier (cf. Hornby 2010: 505; Payne & Huddleston 2010: 391-392, 396-397; Quirk et al. 2012: 388, 870-871, 1140-1142).

- (180) We did not buy any **apples**, and still we had enough for the weekend.
- (181) You were not friendly *enough* to that customer.
- (182) Linda has many **DVDs** but still she is always borrowing several from me.

3.8.5 *Some and any*

Some usually occurs with plural nouns (example (183)) and non-count nouns (example (184)). Only determinative *some* is used with singular count nouns. Similarly to *some*, *any* can be used with singular and plural count nouns (example (185)) and non-count nouns. *Some* is an assertive form, i.e. it is linked to positive statements (example (184)), *any* is a non-assertive form, i.e. it is linked to negative statements (example (185)). If *some* and *any* are determiners or modifiers, they are non-anaphoric, as the determiner *some* in example (183). As modifier, *some* stands for “approximately” as in *some twenty people*; *any* is used in place of “at all” (example (186)). Moreover, *some* can occur generically to refer to “people in general”, which is a further non-anaphoric use. Example (187) illustrates such a case. *Some* is then interpreted as *some people* (cf. Hornby 2010: 57, 1469; Huddleston 2010c: 1131; Payne & Huddleston 2010: 380-381, 385; Quirk et al. 2012: 83-84, 380, 383-384, 389-392, 870-872).

(183) Timmy found *some* friends last year.

(184) Linda saved the **money I gave her**. She only spent some on new clothes.

(185) This time I took so many **pictures during my trip to China**. Last year I did not take any.

(186) He cannot run *any* faster.

(187) *Some* are really interested in politics, but most are not.

3.8.6 *Either, neither and none*

It seems that *either* as a pronoun takes antecedents that contain plural count nouns or coordinated nouns (example (188)). Determinative *either* is only used with singular count nouns, in which case it is usually non-anaphoric (cf. Payne & Huddleston 2010: 388-389). *Either* in both uses as pronoun and determiner is restricted to two entities. In this way it contrasts with *any*, which is used if the choice is among three or more entities. Example (188) shows *either* denoting only two people. *Either* could here be paraphrased by *either Jack or Mae*. This means that *either* always substitutes a whole noun phrase, and not a noun as with previous indefinite pronouns.

The item *neither* has similarities to *either* in that it denotes two entities (example (189)). It is used as pronoun in *of*-phrases and takes antecedents that are plural count nouns or coordinated nouns. As with *either*, the item *neither* also

works as a substitute for a whole noun phrase. Furthermore, *either* and *neither* can both have split antecedents (cf. Halliday & Hasan 2008: 157-158). *Either* and *neither* can also work as adverbs, such as in (190), in which case they are non-anaphoric (cf. Hornby 2010: 488, 1024; Huddleston, Payne & Peterson 2010: 1308).

None occurs if three or more entities are denoted (example (191)). Anaphoric *none* refers to singular and plural count nouns, and to non-count nouns. *None* differs from indefinite pronouns discussed so far in that it is only used as a pronoun. The corresponding determiner would be *no*, which is not relevant here. *None* is non-anaphoric if it is used as modifier in the form of an adverb (example (192)). In such a use it stands for “not at all” (cf. Hornby 2010: 1036; Quirk et al. 2012: 377, 391-392, 870-872).

- (188) If **Jack and Mae** need the car to pick up Cindy, either can use it.
- (189) **My two best friends** wanted to visit me at my parents' house, but neither knew that I was in Italy.
- (190) He wasn't *either*.
- (191) Max has several **cars** but none works.
- (192) Although he has read a lot about psychology, he is *none* the wiser.

3.8.7 *Many and much/more/most, few/fewer/fewest and little/less/least*

Quirk et al. (2012) comment on the relationship of these quantifiers to each other as follows: “*Many* [‘a large number’] contrasts with *a few* [‘a small number’], and *much* [‘a large amount’] contrasts with *a little* [‘a small amount’]” (ibid.: 384).²⁹ The items *many* and *much* are absolute forms, *more* is the comparative and *most* the superlative form (cf. Herbst, Stoll & Westermayr 1991: 141). *Many* occurs with plural count nouns (example (193)), *much* with non-count nouns (example (194)). The comparative and superlative forms of *many* and *much* are the same. *Much* as well as *more* and *most* occurs non-anaphorically as modifier in the form of an adverb (example (195)). Here *much* stands for “to a great degree”.

Few is an absolute form, *fewer* a comparative, *fewest* a superlative. All three items are used with plural count nouns (example (196)). *Few* denotes a bit of a smaller number than *several*. Furthermore, *little* is the absolute, *less* the comparative and *least* the superlative form. All three items occur with non-count

²⁹ Square brackets cited from the original.

nouns (example (197)). *Less* and *least* are also found with plural count nouns, but only in informal language. Finally, all items discussed here can be used determinatively. *Few* and *little* as well as their comparative and superlative forms are also modifiers, in which cases they are non-anaphoric. An example of a modifier in the form of an adverb is given in (198) (cf. Hornby 2010: 902, 938, 995, 997, 1003; Huddleston 2010c: 1131, 1164-1166; Payne & Huddleston 2010: 394; Quirk et al. 2012: 380, 384-386, 388, 458).

- (193) **Students** are usually hard-working, therefore, many achieve high results.
- (194) We finished some of **the work** today, but there is still much left to do.
- (195) Thank you very *much*.
- (196) Last week there were only **fifty people** in the audience. Yesterday there were even fewer.
- (197) This year I drank more **alcohol**, while Steven drank less.
- (198) These shoes are a *little* bit too small for me.

3.8.8 Further non-anaphoric uses of all *of*-pronouns

All indefinite pronouns discussed so far have some non-anaphoric characteristics in common. For instance, indefinite pronouns can work deictically. Furthermore, if an *of*-phrase follows an indefinite pronoun, the expression is considered to be non-anaphoric. This feature can be exemplified by regarding *all* and *both*. If *all* and *both* precede *the*, there is a choice whether to use *of* or not. As a result, speakers can choose whether *all* and *both* are used as pronouns that are postmodified by an *of*-phrase (example (199) a)) or are used as determiners (example (199) b)) (cf. Quirk et al. 2012: 381). Other items that frequently take an *of*-postmodification are, for instance, *either*, *neither*, *each*, *some*, *any*, *many*, *much*, *few* and *several* (cf. Payne & Huddleston 2010: 413).

In addition, Stirling & Huddleston (2010: 1516) use the terms “implicitly partitive” for expressions without *of*-postmodification, such as example (199) b), and “explicitly partitive” for indefinite pronouns that are postmodified by an *of*-phrase, such as (199) a). This distinction also illustrates that indefinite pronouns with postmodifying *of*-phrases are not anaphoric. The exception is *none*, as this item can only be pronominal. Consequently, indefinite pronouns with *of*-postmodification are not regarded as anaphors.

- (199) a) *All of the restaurants in Marble Street are excellent.*
 b) *All restaurants in Marble Street are excellent.*

3.8.9 Cataphoric use

A cataphoric interpretation of the items in this category is found much less often than an anaphoric direction. Cataphors can occur across clauses, but not across sentences. Example (200) shows a cataphor (cf. Carter & McCarthy 2006: 248; Halliday & Hasan 2008: 78-79). According to Quirk et al. (2012: 868), the conditions where cataphors occur with forms of substitution are the same as with personal pronouns. However, the anaphor-antecedent relation of substitution is mainly anaphoric and rarely cataphoric (cf. Halliday & Hasan 2008: 145).

- (200) If you need one, there is **a ruler** in the drawer.

3.8.10 Indefinite pronouns as elliptical forms

Another point of interest deals with the question of whether the forms except for *one*, *other* and *another* and *none* – as they are only pronouns if used anaphorically – really show substitution or are better seen as cases of ellipsis. For instance, Halliday & Hasan (2008: 155-160, 162) regard indefinite pronouns as instances of ellipsis. Quirk et al. (2012) tend to label them as ellipses as well, even though they concede that this can lead to difficulties and that “many examples will accept a different type of analysis” (ibid.: 871). Examples (201) and (202) illustrate that point. To interpret *each* in example (201) as ellipsis would be acceptable because the full form is *each of Martin and David*. Such an analysis, however, is problematic in example (202). The expression *all of Linda, Bob and Steven* seems questionable (cf. Carter & McCarthy 2006: 250, 252; Quirk et al. 2012: 871-872).

As a result, Payne & Huddleston (2010: 419-421) avoid speaking of substitution and ellipsis with pronouns. Instead, they analyse such instances in terms of a “fused-head construction”. They state:

Fused-head NPs [i.e. noun phrases] are those where the head is combined with a dependent function that in ordinary NPs is adjacent to the head, usually determiner or internal modifier [...]. (ibid.: 410)

As a result, they regard examples such as (193) as instances in which *many* is the fused form of *many students*. Now, the procedure adapted in this book is different: all items mentioned explicitly in the list above are regarded as substitutions, other instances not included are then treated as cases of ellipses. As indefinite pronouns contribute to a more reduced text than substitutional forms, they are a means of reduction.

- (201) **Martin and David** both applied for the job. Each was invited for an interview.
- (202) **Linda, Bob and Steven** are watching TV. All like watching cartoons.

3.8.11 Summary

Of indefinite pronouns, only *of*-pronouns can be anaphoric. Of these, pronouns usually function as anaphors; they are reductive and are treated as forms of substitution rather than as elliptical forms. A cataphoric use is very rare. Furthermore, all items here share some non-anaphoric uses, e.g. in determinative function with some exceptions. An overview of the characteristics of indefinite *of*-pronouns is given in Tables 18 and 19.

Table 18: Anaphoric use of indefinite *of*-pronouns (cf. also Quirk et al. 2012: 377)

	Anaphor		Antecedents						Cata-phor
	Deter-miner	Pro-noun	Number			Form			
			Singular count noun	Plural count noun	Non-count noun	Noun phrase	Head of noun phrase	Split ante-cedents	
<i>one</i>	-	x	x	x	-	x	x	-	(x)
<i>ones</i>	-	x	x	x	-	-	x	-	-
<i>other</i>	-	x	x	-	-	-	x	-	-
<i>others</i>	-	x	-	x	-	-	x	-	-
<i>another</i>	-	x	x	-	-	-	x	-	-
<i>both</i>	(x)	x	(x) ¹	x	-	x	x	x	-
<i>all</i>	(x)	x	(x) ¹	x	x	x	x	x	-
<i>each</i>	(x)	x	(x) ¹	x	-	x	x	x	-
<i>enough</i>	-	x	-	x	x	x	x	-	-
<i>several</i>	-	x	-	x	-	x	x	-	-
<i>some</i>	-	x	-	x	x	x	x	-	-
<i>any</i>	-	x	-	x	x	x	x	-	-
<i>either</i>	-	x	x ²	x	-	x	-	x	-

<i>neither</i>	-	x	x ²	x	-	x	-	x	-
<i>none</i>	-	x	x	x	x	x	-	-	-
<i>many</i>	-	x	-	x	-	x	x	-	-
<i>much</i>	-	x	-	-	x	x	x	-	-
<i>more, most</i>	-	x	-	x	x	x	x	-	-
<i>few, fewer, fewest</i>	-	x	-	x	-	x	x	-	-
<i>little, less, least</i>	-	x	-	(x)	x	x	x	-	-

¹ Only with split antecedents or coordinated nouns

² With coordinated nouns

Table 19: Non-anaphoric use of indefinite *of*-pronouns (cf. also Quirk et al. 2012: 377)

	Deter- miner	Modi- fier	Non-anaphoric uses of pronouns			<i>every- thing</i>	Split con- struction of reciprocal pronouns ¹	Nu- meral	Ad- verb
			Deixis	Generic	Post- posed				
<i>one</i>	x	-	x	x	-	-	x	x	-
<i>ones</i>	-	-	x	x	-	-	-	-	-
<i>other</i>	x	-	x	-	-	-	x	-	-
<i>others</i>	-	-	x	x	-	-	-	-	-
<i>another</i>	x	-	x	-	-	-	x	-	-
<i>both</i>	x	-	x	-	x	-	-	-	-
<i>all</i>	x	x	x	x	x	x	-	-	x
<i>each</i>	x	-	x	-	x	-	x	-	-
<i>enough</i>	x	x	x	-	-	-	-	-	x
<i>several</i>	x	x	x	-	-	-	-	-	-
<i>some</i>	x	x	x	x	-	-	-	-	x
<i>any</i>	x	x	x	-	-	-	-	-	x
<i>either</i>	x	x	x	-	-	-	-	-	x
<i>neither</i>	x	x	x	-	-	-	-	-	x
<i>none</i>	-	x	x	-	-	-	-	-	x
<i>many</i>	x	-	x	x	-	-	-	-	-
<i>much</i>	x	x	x	-	-	-	-	-	x
<i>more, most</i>	x	-	x	-	-	-	-	-	-
<i>few, fewer, fewest</i>	x	x	x	x	-	-	-	-	-
<i>little, less, least</i>	x	x	x	-	-	-	-	-	x

¹ Here seen as “non-anaphoric” because such cases belong to reciprocal pronouns

3.9 Other forms of coreference and substitution: *the same*, *such* and *so*

Some further forms of substitution that are not indefinite pronouns and do not fall into one of the other categories should not be forgotten. These are *the same* and *so*. *Such* is a case of coreference³⁰ (Quirk et al. 2012: 865).

3.9.1 *The same*

The same is an expression in which *same* can work as the modifier (example (203)) or head of a noun phrase (example (204)). As for a modifier, a noun has to follow *same* and the whole expression refers back to the antecedent. In this case, *same* is an adjective or adverb, not a pronoun (cf. Hornby 2010: 1353; Stirling & Huddleston 2010: 1545).

The item *the same* is a form of substitution, which implies that anaphor and antecedent do not refer to the same entities. For instance, in example (204) Tony and Susan both want a cup of coffee, but will not share one cup, of course. By paraphrasing the second sentence of this example, it is possible to formulate alternatively: *Susan would like one, too*. This “additive element of meaning” (ibid.: 873) is what distinguishes *the same* from other forms of substitution.

The same shows some non-anaphoric uses. First, the expression *all the same* does not work anaphorically. Second, *the same* can be used deictically (cf. Huddleston 2010c: 1138-1140; Stirling & Huddleston 2010: 1545; Quirk et al. 2012: 636). Third, *the same* can be part of the verb phrase *do the same*, which is discussed in a separate category (see chapter 3.10). It is therefore regarded as non-anaphoric with other forms of coreference and substitution.

(203) **Mr. Miller** smashed the window. The same person is responsible for the holes in the road.

(204) Tony would like **a cup of coffee**. Susan would like the same.

³⁰ An exception is if *such* refers to a whole clause or sentence. In that case, *such* belongs neither to coreference nor substitution.

3.9.2 *Such*

Such is either pronoun (example (205)) or determiner (example (206)). It can work anaphorically in both functions, although the pronoun function is much less frequent. As for a determiner, *such* together with the whole phrase constitutes the anaphor, e.g. *such sacrifices* in example (206). A special case of *such* is if it plays the role of a complement of *as* (example (207)). The antecedent of *such* can be a noun phrase (example (207)) or a whole clause (example (206)). In general, *such* has close similarities to demonstrative pronouns and can often even be replaced by a demonstrative pronoun. For instance, in example (205) *this* or *that* can be used instead of *such*, without any major changes of meaning (cf. Summers 2006: 1390).

Non-anaphoric uses of *such* include a variety of possibilities. First, *such* as degree modifier is not anaphoric, as in (208). Additionally, *such* can occur as part of the subordinators *such ... (that)* and *such ... as*. In example (209), *such* is a degree modifier in the superordinate clause, whereas *that* introduces the subordinate clause. Second, the use as complement of *as* has to be distinguished from the non-anaphoric, metalinguistic function of *as such*, for instance in (210). This example could be paraphrased by *The newspaper is excellent in the strict sense of the term*. The inversion of *such* and *as*, i.e. *such as*, is also non-anaphoric because *such* is here used for exemplification (example (211)). Third, Stirling & Huddleston (2010: 1546) interpret examples such as (212) as anaphors because they regard it as comparative form. The full form of the sentence would therefore have to be: *However, the drills are not such an enjoyment as Joe's games*. Such instances do not show coreference, but rather are cases of ellipses, and therefore are ignored in this category and considered with ellipses (cf. Huddleston 2010c: 1142-1143; Stirling & Huddleston 2010: 1546-1547; Quirk et al. 2012: 76, 257, 376, 999-1000, 1109, 1142-1144, 1315).

- (205) I would be happy to **take over the duty of spokesperson** if such is required.
- (206) **The room was very small, I did not have many pieces of furniture**, but such sacrifices were necessary in order to go to Harvard.
- (207) She only told **true stories**, but they are not seen as such today.
- (208) It's *such* a problem to get good waiters.
- (209) There was *such* a noise (that) we went out to see what was happening.
- (210) The newspaper is excellent *as such* but the layout could be better.
- (211) Linguists *such as* Halliday and Hasan contributed much to text linguistics.

- (212) **Joe's games** are fun. However, the drills are not *such* an enjoyment
—.

3.9.3 *So*

It depends on how the item *so* is used, whether it is an adverb or a conjunction (cf. Hornby 2010: 1462-1463).³¹ There are various anaphoric uses of *so*. First, it can substitute a clause (example (213)). *So* can also be preposed, i.e. occur in the front position of a sentence (example (214)). Here, a whole clause is antecedent again, but the item *so* can also occur at the beginning of clauses and not substitute a whole clause (example (215)). Second, *so* can substitute adjective phrases as in example (216) (cf. Stirling & Huddleston 2010: 1535-1539; Quirk et al. 2012: 879-883, 1323).

Third, *so* can occur as a substitution for the non-finite complement³² of a lexical verb if it occurs in an *if*-sentence (example (217)). Such a use is only possible with some verbs such as *wish* and *choose*. The non-reduced *if*-clause in example (217) is *if you wish to attend the conference* with *so* substituting the non-finite complement. Similarly, complements of auxiliary verbs can be substituted and again, the antecedent is commonly a non-finite clause. Fourth, *so* occurs in reduced main clauses, frequently in the expression *more so* and *less so* (example (218)). The full sentence of the example reads: *Eleanor needs to practice English, Eleanor needs to practice English even more than Lucy*. Fifth, *so* can substitute expressions where *thus* or *in this way* could be used instead of *so*. Number (219) demonstrates such an instance (cf. Stirling & Huddleston 2010: 1535-1539; Quirk et al. 2012: 879-883).

- (213) **Tina will come to the party.** At least I hope so.
 (214) **Betty will come over for tea.** So she said, at least.
 (215) John was **very happy**. So would Linda be if she had won the race.
 (216) They were **very tired**, or at least they seemed so.
 (217) Furthermore, you can **attend the conference** if you so wish.
 (218) **Eleanor needs to practice English**, even more so than Lucy.
 (219) Nowadays, **part-time** employment is increasing steadily. The people so employed earn substantially less than full-time employees.

³¹ Summers (2006: 1318-1319) states that *so* can also be an adjective.

³² The term “complement” here is not used in the sense of clause functions, but in the distinction between “complement” and “adjunct” (cf. Huddleston 2010a: 52-54, 59).

Apart from *so* as anaphor, some non-anaphoric uses need to be mentioned as well. *So* can occur deictically either as degree modifier (example (220)) or as manner adjunct (example (221)). A corresponding indexing act or action has to go with such utterances. As a degree modifier, the demonstrative *this* or *that* could replace *so*; in the case of a manner adjunct, *thus* is possible instead of *so*. Furthermore, if a subordinate clause is introduced by *as*, *so* can occur in the main clause (example (222)). *So* then means *in the same way/time as that*. With regard to their anaphoricity, Stirling & Huddleston (2010) argue: “*So* is here at most only marginally anaphoric, indicating likeness with what has gone before” (ibid.: 1539). Such cases are therefore regarded as being non-anaphoric in this book. Additionally, it is important to mention that *so* can be found in the expression *do so*, which is discussed in chapter 3.10. Furthermore, *so* occurs non-anaphorically as conjunction. Finally, *so* is used idiomatically, e.g. in *or so* and *and so on* (cf. Halliday & Hasan 2008: 139-140; Quirk et al. 2012: 1466).

(220) The crocodile was *so* long.

(221) To make a ship, you have to fold the paper, *so*.

(222) As awful as the story began, *so* it ended.

3.9.4 Cataphoric use

With regard to a cataphoric interpretation, the case is analogous to the substitutional forms of indefinite pronouns with *the same* and *so*. Cataphors are rather infrequent, though possible (example (223)). Another example is (224), where *so* refers to an adjective phrase. *Such* usually takes no cataphoric interpretation (cf. Carter & McCarthy 2006: 248, 254; Halliday & Hasan 2008: 141).

(223) If they said so, **they will take care of your cat.**

(224) Brian was, and still is so, **very aware of his shortcomings.**

3.9.5 Summary

Pointing out the most important aspects of *the same*, *such* and *so*, all three are forms of reduction, either through coreference or through substitution. *Such* and *so* can have cataphoric reference, which, however, is rarely found. Additionally, all items have to be distinguished from various non-anaphoric uses. A summary is given in Tables 20 and 21.

Table 20: Anaphoric use of other forms of coreference and substitution

Anaphor		Cata-phor					Antecedent	
Pro-noun	Deter-miner	Modi-fier	Head of NP	Com-plement	Com-plement of <i>as</i>	Prepo-sed	more <i>so/less so</i>	Manner adjunct
<i>the same</i>	-	-	x	-	-	-	-	-
<i>such</i>	x	x	-	-	x	-	-	-
<i>so</i>	-	-	-	x	-	x	x	x

¹ If a complement or preposed

² After *if*

Table 21: Non-anaphoric use of other forms of coreference and substitution

Dei-xis	Con-junction	Degree modifier	Manner adjunct	Com-parison	Metalinguistic <i>as such</i>	<i>all the same</i> <i>as in subordinate clause</i>	<i>so in main clause</i>	Idiomatic uses	<i>do so/ do the same</i>
<i>the same</i>	x	-	-	-	-	-	x	-	x
<i>such</i>	x	-	x	-	x	-	-	-	-
<i>so</i>	x	x	x	x ¹	-	-	x	x	x

¹ Constitutes a form of ellipsis

3.10 Verb phrases with *do* and combinations with *so*, *this*, *that*, *it* and *the same (thing)*

The items discussed here are the present tense forms *do*, *does*, the past tense form *did*, the present participle (-ing) form *doing* and the past participle (-ed) form *done*. With the exception of the non-finite forms *doing* and *done*, the preceding items have corresponding negative forms, either contracted or not, which are *don't/do not*, *doesn't/does not*, *didn't/did not*. Furthermore, the complex forms *do so*, *do this*, *do that*, *do it* and *do the same (thing)* are treated here. With these, *does*, *did*, *doing* and *done* can be used instead of *do* (cf. Huddleston 2010b: 222-223; Quirk et al. 2012: 875).

The verb *do* and the complex forms, in which the main verb *do* is one element, can substitute a verb without auxiliaries, plus any complements and adjuncts (cf. Halliday & Hasan 2008: 113). Additionally, these complex forms have to be distinguished from related categories mentioned above, in which they are not considered if combining with *do*: these are *so* and *the same*, the demonstrative pronouns *this* and *that*, and the personal pronoun *it*. Otherwise, such items would be analysed twice, e.g. as *do so* and also as *so*. Moreover, the complex forms refer to the antecedent and so establish cohesion as a whole, rather than by being split into two parts (cf. *ibid.*: 126).

3.10.1 Simple forms with *do*

An important point with the simple forms of *do* is the distinction between the main verb *do* (example (225)) and *do* as an auxiliary verb (example (226)). Quirk et al. (2012: 874-875) only treat the main verb *do* as a substitutional form. In case of an auxiliary, they speak of an ellipsis after *do*. They argue:

A careful distinction must be made, however, between *do* as an auxiliary verb with the status of dummy operator, and *do* as a main verb [...]. It is in the latter function that *do* is a substitute form.

As an auxiliary, on the other hand, *do* is structurally parallel to other operators [such as *can*] [...]. In such cases, we will talk of ellipsis of the predication, rather than of substitution for the predicate. (*ibid.*: 874)

Yet elsewhere Quirk et al. (2012) concede for examples such as (227):

This is strictly, however, not ellipsis, but quasi-ellipsis [...], since the insertion of the omitted predication after *did* would result in an unacceptable sentence [...]. [It] is unacceptable

because DO occurs in a context where the dummy operator cannot occur. But there are other constructions (eg clause negation, subject–operator inversion, emphatic operator constructions) in which the operator would occur for independent reasons, and in these cases DO fulfils the conditions of standard ellipsis of the predication [...]. (ibid.: 905-906)

Quirk et al.'s argument is therefore only partly followed in this book. In cases where auxiliary *do* cannot occur together with the unit it refers to, i.e. quasi-ellipsis, these are treated as verb phrase anaphors. Only in contexts in which auxiliary *do* combines with what is left out, ellipsis is assumed. Consequently, example (226) is a case of ellipsis because the full sentence is *I have a dog, but John does not have a dog*. However, the main verb *does* in example (225) is used instead of repeating *speaks English perfectly* and therefore constitutes a case of verb phrase anaphor. The non-reduced sentence so reads: *At least, I think she speaks English perfectly. Did* in example (227) is a dummy operator, but constitutes a verb phrase anaphor nevertheless because *Yesterday Tim played volleyball better than Mike did played volleyball* is not possible.

(225) Mary **speaks English perfectly**. At least, I think she does.

(226) I **have a dog**, but John does not ____.

(227) Yesterday Tim **played volleyball** better than Mike did.

Furthermore, some non-anaphoric uses of the simple forms of *do* occur. In general, non-anaphoric uses occur as unreduced main verbs (example (228)). In addition, all uses of auxiliary *do* in combinations with main verbs are non-anaphoric. As auxiliary the present forms *do*, *does* and the past form *did* occur. Consequently, only these items have to be distinguished from uses of substitutional *do*. Moreover, there are certain constructions in which non-anaphoric auxiliary *do* is prone to be confused with substitutional uses of *do*: negation (example (226)), question (example (229)) and emphasis (example (230)). In these constructions, an auxiliary is needed. The auxiliary *do* occurs if no other auxiliary such as *will* or *can* is present. Such uses resemble substitutional *do*, but are forms of ellipsis because the auxiliary combines with the antecedent if inserted, e.g. *Do you play the piano?* in (229) (cf. Stirling & Huddleston 2010: 1523-1524; Quirk et al. 2012: 132-133).

(228) He *did* the washing-up.

(229) I **play the piano**. Do you ____?

(230) Steven insists he did not **watch the film**, but he DID ____.

3.10.2 Complex forms with *do*

Do so, *do this*, *do that* and *do it* are the central complex forms with *do*. Additionally, *do the same (thing)* is included here because the item *the same* has been treated above. To begin with, the items of *do so* are slightly more formal than the simple forms with *do*. The element *so* usually follows *do*, but can precede with the *-ing*-form *doing so* (example (231)). It is not permitted to use *do so* deictically, which means that *do so* is always anaphoric. Whereas *do so* is an idiom, *do this*, *do that*, *do it* and *do the same (thing)* are not. Consequently, the characteristics of these non-idiomatic items are the same as those of their two elements. Stirling & Huddleston (2010) maintain:

[T]heir meaning and properties can be predicted from those of **do** and the NP as used in other combinations. The anaphoric nature of the VPs [i.e. verb phrases] headed by **do** [...] is attributable to *it* and the demonstratives, for **do** occurs with the same meaning in non-anaphoric VPs [...]. (ibid.: 1532)

These complex forms also show similar non-anaphoric uses as the items on their own. For instance, *do this* and *do that* often occur deictically, in the same way as the demonstrative pronouns *do* (cf. Carter & McCarthy 2006: 252; Stirling & Huddleston 2010: 1529-1534; Quirk et al. 2012: 876).

Moreover, complex forms differ from each other regarding some additional features. In general, *do so*, *do that* and *do it* can often be used equally, without differences in meaning. However, *do so* is usually the most formal of them. Furthermore, *do that* is used particularly in contexts where contrasts occur and so has an antecedent that fits into this contrast (example (232)). With regard to *do the same (thing)*, it is an alternative to *do that*, especially in comparison. In addition, *do the same (thing)* shows features as *the same*, which means that *do the same (thing)* and its antecedent do not denote identical events, but *do the same (thing)* rather includes the meaning of “too” (cf. Carter & McCarthy 2006: 253-254; Quirk et al. 2012: 878).

- (231) He suggested we should **launch an investigation** and we are now in the process of so doing.
- (232) The fine weather was perfect for **going shopping**. Elisabeth preferred doing that to studying for the exam.

3.10.3 The form of the antecedent and cataphoric use

For verb phrases with *do* and combinations, the antecedent takes the form of a verb plus any complements and adjuncts (cf. Quirk et al. 2012: 879). The antecedent and the expression that could be inserted instead of the anaphor, however, need not always be morphologically identical. As a result, differences in inflection are generally acceptable. As to complex forms, such differences can even be greater than with simple forms. For instance, the antecedent in (233) is *spoke to my grandmother while she was still alive*, but in place of the anaphor the expression *spoken to my grandmother while she was still alive* has to be inserted. The past form so turns into a past participle form (cf. Stirling & Huddleston 2010: 1525-1526, 1531).

As regards a cataphoric interpretation, it is possible with *do*. Example (234) can serve as illustration. The same goes for complex forms: example (235) shows the item *do so* exemplarily (cf. Halliday & Hasan 2008: 128; Stirling & Huddleston 2010: 1525; Quirk et al. 2012: 875).

- (233) I never spoke **to my grandmother while she was still alive**. I now wish I had done so.
- (234) If Jenny does, will you also **wear a dress to the party**.
- (235) As no scientist has succeeded in doing so, he is striving to **find a solution to the mathematical problem**.

3.10.4 The relationship between anaphor and antecedent

The simple and complex forms of *do* are mostly substitutional forms and show reduction. There is, however, one difference within the complex forms regarding the interpretation of the anaphoric relationship. Stirling & Huddleston (2010) explain this circumstance:

Anaphoric ***do it*** and ***do that*** characteristically denote specific events, either the same event as that denoted by the antecedent VP or at least the same action involving the same participants as those expressed by the internal complements of the antecedent VP. In contrast, ***do so*** VPs often denote merely the same **kind** of event as the antecedent. (ibid.: 1534)

Consequently, the forms *do it*, *do this* and *do that*, through the influence of their second element, do not show substitution, but usually coreference. They are combinations of the substitute form *do* and the coreferential forms *it*, *this* and

that (cf. Halliday & Hasan 2008: 125-127; Quirk et al. 2012: 876). If anaphoric items refer to a clause or sentence, they belong to the miscellaneous category.

3.10.5 Summary

The items discussed here are instances of substitution and, with some forms, of coreference. A difference has to be drawn between simple and complex forms, as each of these categories has different characteristics. The most central features are that the simple forms work anaphorically if they occur as main and, in some cases, as auxiliary verbs; the complex forms show close similarities to the features of their second element. The antecedent and the expression that is inserted instead of the anaphor can also differ inflectionally. Finally, a cataphoric interpretation is possible with all items. An overview of the non-anaphoric features is given in Table 22.

Table 22: Non-anaphoric use of verb phrases with *do* and combinations

	As main verb	As auxiliary verb in:			Ellipsis as auxi- liary verb	See non- anaphoric condi- tions for <i>so</i> , <i>this</i> , <i>that</i> , <i>it</i> , <i>the same</i>	Deixis
Negation							
Question							
Emphasis							
Simple forms							
<i>do</i>	x	x	x	x	x	-	-
<i>does</i>	x	x	x	x	x	-	-
<i>did</i>	x	x	x	x	x	-	-
<i>don't/</i> <i>do not</i>	-	x	x	x	x	-	-
<i>doesn't/</i> <i>does not</i>	-	x	x	x	x	-	-
<i>didn't/</i> <i>did not</i>	-	x	x	x	x	-	-
<i>doing</i>	x	-	-	-	-	-	-
<i>done</i>	x	-	-	-	-	-	-
Complex forms							
<i>do so</i>	-	-	-	-	-	-	-
<i>does so</i>	-	-	-	-	-	-	-
<i>did so</i>	-	-	-	-	-	-	-
<i>doing so</i>	-	-	-	-	-	-	-
<i>done so</i>	-	-	-	-	-	-	-

<i>do this</i>	-	-	-	-	-	x	x
<i>does this</i>	-	-	-	-	-	x	x
<i>did this</i>	-	-	-	-	-	x	x
<i>doing this</i>	-	-	-	-	-	x	x
<i>done this</i>	-	-	-	-	-	x	x
<i>do that</i>	-	-	-	-	-	x	x
<i>does that</i>	-	-	-	-	-	x	x
<i>did that</i>	-	-	-	-	-	x	x
<i>doing that</i>	-	-	-	-	-	x	x
<i>done that</i>	-	-	-	-	-	x	x
<i>do it</i>	-	-	-	-	-	x	x
<i>does it</i>	-	-	-	-	-	x	x
<i>did it</i>	-	-	-	-	-	x	x
<i>doing it</i>	-	-	-	-	-	x	x
<i>done it</i>	-	-	-	-	-	x	x
<i>do the</i>	-	-	-	-	-	x	x
<i>same (thing)</i>	-	-	-	-	-	x	x
<i>does the</i>	-	-	-	-	-	x	x
<i>same (thing)</i>	-	-	-	-	-	x	x
<i>did the</i>	-	-	-	-	-	x	x
<i>same (thing)</i>	-	-	-	-	-	x	x
<i>doing the</i>	-	-	-	-	-	x	x
<i>same (thing)</i>	-	-	-	-	-	x	x
<i>done the</i>	-	-	-	-	-	x	x
<i>same (thing)</i>	-	-	-	-	-	x	x

3.11 Ellipses

The types of anaphors treated so far always had an explicit expression as anaphor. The category of ellipses will now discuss those instances where the anaphor is realised by a gap referring to an antecedent. The items left out, however, have to occur in the text. This excludes ellipsis where the interpretation comes from the situational context. For instance, example (236) can only be clarified if the hearer or reader is familiar to the corresponding situation. Whatever the motivation for uttering the sentence, the missing information cannot be determined from the text (cf. Stirling & Huddleston 2010: 1456; Quirk et al. 2012: 895-896).

The antecedents of ellipses can be inserted in place of the anaphors more or less precisely. Example (237) shows an anaphor whose antecedent is found in the text in exactly the same way as it is required. The expression in example

(238) that has to be filled in instead of the ellipsis, however, does not occur in that form in the text. The alteration that is necessary here involves the grammatical change from a past participle to an infinitive form. Not only antecedents that occur in exactly the required form are regarded in this book, but also where grammatical changes are obligatory. Furthermore, the focus of ellipses lies on those instances that contribute to an informational increase if these are resolved. All in all, ellipses can also be part of anaphoric chains, and they contribute to cohesion (cf. Herbst, Stoll & Westermayr 1991: 183; Stirling & Huddleston 2010: 1457; Quirk et al. 2012: 884-890, 900).

(236) How dare you ___?

(237) He begged me to **go with him**, but I did not want to ___.

(238) He has still not **repaired the machine**, so I will have to ___.

3.11.1 Types of ellipses

The subtypes of ellipses are nominal, verbal and clausal ellipsis.³³ The first category includes instances where a noun is not present in a noun phrase, another item then realises the head (example (239)). The noun can also be accompanied by modifiers, which can be left out together with the noun (example (240)). Such types of ellipses refer anaphorically to parts of a noun phrase. The noun in comparative and superlative noun phrases can also be left out (example (241)) (cf. Halliday & Hasan 2008: 147, 150, 164-166). Additionally, a noun may be elided if a genitive occurs, e.g. *Ms Parkinson's* for *Ms Parkinson's car*. Such genitives are especially used with nouns denoting humans. Coordinate constructions, i.e. clauses connected with *and*, *or* and *but*, for instance, in which a whole noun phrase is missing, are also part of nominal ellipsis (example (242)) (cf. Biber et al. 2007: 296-297, 307).

(239) Normally, twenty **students** are allowed to participate in this course, but for this term we agreed on twenty-five ___.

(240) The last **essay Mary handed in** was better than the first ___.

³³ Quirk et al. (2012: 892-893) distinguish general and special ellipsis. The subtypes nominal, verbal and clausal ellipsis can each contain types that Quirk et al. regard as special ellipsis, e.g. comparative and coordinate constructions. As this book takes the forms and not the constructions in which ellipses occur as basis for the classification, Quirk et al.'s categorisation is not followed.

- (241) If you really have to buy a **guitar**, do not get the cheapest ____.
 (242) **Cindy** left early in the morning and ____ forgot to wake him up.

Verbal ellipsis covers cases where a verb alone (example (243)), or a verb with object and/or adverbial (example (244) with an object) is missing. Halliday & Hasan (2008) explicitly state that “verbal ellipsis [...] also involve[s] ellipsis that is external to the verb itself, affecting other elements in the structure of the clause” (ibid.: 197). The subject and, in most cases, an auxiliary remain in the sentence in such instances. As mentioned above, *do* as main verb and what Quirk et al. term quasi-ellipsis do not fall into the category of ellipsis, only all other circumstances of auxiliary *do*. Verbal ellipsis can also be found in comparative sentences (example (245)), or in response forms (example (246)). Additionally, verbal ellipsis, together with nominal ellipsis, can occur in coordinations.³⁴ Example (247) illustrates a case where an auxiliary verb and a noun are left out. Another example that involves nominal ellipsis and a main verb is presented in (248).

Finally, an ellipsis can substitute a whole clause.³⁵ *To*-infinitive clauses, for instance, can be elided: Take, for example, number (249), where the infinitive clause (*to play at the concert*) has to be inserted. Other types of clausal ellipsis can occur as well: clauses beginning with a *wh*-word, *-ing*-clauses and *that*-clauses. Example (250) shows a *wh*-clause, in which a change in word order takes place: *when Luke will come home* has to be inserted (cf. Halliday & Hasan 2008: 197, 217; Stirling & Huddleston 2010: 1519, 1526, 1542-1543; Quirk et al. 2012: 848-849, 900-911, 1130-1131; see also Swan 2005: chapter 177-182).

- (243) You may **drive** if you can ____.
 (244) George **likes Mozart**, but Steven does not ____.
 (245) She **knows** more than you ____.
 (246) Who **called**? – John ____.
 (247) **Lucy has** congratulated her brother and ____ given him a present for his birthday.
 (248) **Mary invited** her friends but ____ not her neighbours.
 (249) You can **play at the concert** if you want to ____.

³⁴ It is controversial in such cases if the sentence shows ellipsis or a coordination of predication, i.e. of *congratulated her brother* and *given him a present for his birthday* in example (247) (cf. Quirk et al. 2012: 942-945).

³⁵ Contrary to Halliday & Hasan (2008), clausal ellipsis in this work covers not cases in which “verbal ellipsis and clausal ellipsis go together” (ibid.: 201), but only cases in which a full or nearly full clause is left out.

(250) **When will Luke come home?** Sandy didn't tell me ____.

An ellipsis can also be interpreted cataphorically. Example (251) demonstrates an antecedent that follows the ellipsis. Cataphoric ellipses underlie the same restrictions as do other types of anaphors. For instance, the elliptical anaphor is in a subordinate clause in (251) (cf. Stirling & Huddleston 2010: 1456, 1523; Quirk et al. 2012: 895).

(251) Do not ask me why ____, but **he has to go see her right now**.

3.11.2 Non-anaphoric ellipsis

Ellipses cannot only be anaphoric but also deictic, or as Carter & McCarthy (2006: 181, 247) term it, not only textual but also situational. Deictic or situational ellipsis is generally found in restricted, conventionalised contexts. For example, non-anaphoric verbal ellipses are possible in instances such as *May I?* if asking for permission to take something. Furthermore, a personal pronoun as subject can be omitted. Such cases are common in informal speech. Usually *I*, *prop it* or existential *there* could be inserted into the non-anaphoric gap (cf. Carter & McCarthy 2006: 181-182, 186; Stirling & Huddleston 2010: 1523, 1540).

3.11.3 Summary

Ellipses contribute to cohesion in that expressions are left out; they are therefore substitutional. Ellipsis is subdivided into nominal, verbal and clausal ellipses in this book. Only anaphoric uses are relevant from these subtypes and these have to be marked off from non-anaphoric uses. Moreover, cataphoric interpretations are also possible. Table 23 shows an overview of ellipses.

Table 23: Characteristics of ellipses

Anaphoric										Non-anaphoric:		Cataphoric
Anaphor – left out:										deixis		
Noun alone	Noun with modifier	Whole NP	Verb alone	Verb with following elements	Comparative	Superlative	Antecedent in:			Coordination	Response forms	
Nominal	x	x	x	-	-	x	x	-	x	-	x	
Verbal	-	-	x	x	x	-	-	-	x	x	x	
Clausal	-	-	-	-	-	-	-	x	-	-	x	

3.12 Non-finite clauses

Non-finite clauses are not prototypical examples of anaphors. In fact, Quirk et al. (2012: 910, 993-995), for instance, regard them as a special type of ellipsis and treat them only rudimentarily in the context of anaphora. As for Stirling & Huddleston (2010), they do not even mention non-finite clauses in their chapter about deixis and anaphora. Nevertheless, non-finite clauses are important for a number of reasons: first, the frequency of non-finite clauses plays a role. Kortmann (2005) states: “English often prefers abbreviated relative clauses (*The man standing at the corner was my uncle*) to finite ones (*The man who stood at the corner was my uncle*)” (ibid.: 180). As will be shown, non-finite clauses also show a high frequency in the corpus. Second, non-finite clauses are reductive devices and so shorten clauses as “[t]hey are more compact” (Biber et al. 2007: 198, 632). As outlined in Kortmann’s example, finite relative clauses can usually be used instead of non-finite clauses but these finite clauses are then longer (cf. Quirk et al. 2012: 889). Quirk et al. (2012) explain in more detail:

Because nonfinite clauses lack tense markers and modal auxiliaries and frequently lack a subject and a subordinating conjunction, they are valuable as a means of syntactic compression. (ibid.: 995)

Third, the consideration of non-finite clauses is the more urgent as they frequently involve subjects as antecedents. Huddleston (2010d) stresses: “The great majority of non-finite clauses have no subject” (ibid.: 1175) and later “but the interpretation requires that we find an ‘understood subject’” (ibid.: 1193). Subjects are important because they commonly carry information about the topic of a text, i.e. “there is a significant tendency for the subject to refer to the topic, to what the utterance is primarily about” (Huddleston 2010b: 235). This circumstance can be illustrated by using Kortmann’s example. If the two sentences – the first as non-finite clause, the second as its corresponding finite clause – are compared, the relative pronoun – *who* in this case – is only present if the sentence were to be expressed as a finite clause. *Who* is an anaphor and has *the man* – the subject – as antecedent. Additionally, the verb *be* is left out. As a consequence, not considering non-finite clauses would also mean ignoring anaphors such as *who* (cf. Huddleston 2010d: 1211; Quirk et al. 2012: 994-995). Huddleston (2010d) even compares non-finite clauses with personal pronouns. Here he also speaks of anaphora:

The relation between a missing or covert subject and the controller is a special case of anaphora. It is thus analogous to the relation between a personal pronoun and its antecedent. (ibid.: 1269)

As for the relationship between anaphor and antecedent, *non-finite clause* anaphors show a coreferential aspect as they refer coreferentially to an antecedent. This antecedent would also be the subject of the corresponding finite clause, as seen in the example above. However, the antecedent cannot simply be inserted into the clause but a reformulation is usually necessary. Nevertheless, non-finite clauses are counted as part of the coreferential category.

Non-finite clauses which are characterised by the fact that their verbs are non-finite, i.e. they do not show tense contrast, fall into four different subtypes depending on the form of the verb: *to*-infinitive, bare infinitive, *-ing*-participle and *-ed*-participle. From these, bare infinitive clauses will not be considered here because they are “relatively rare” (Quirk et al. 2012: 993; see also Huddleston 2010d: 1174). A bare infinitive commonly occurs in pseudo-cleft sentences (example (252)) and so is restricted in its use. In such cases, a *to* can be inserted. Additionally, bare infinitive clauses always need their own explicit subject in the function of direct object and then would again be non-anaphoric. Most importantly, clauses containing bare infinitives are hard to detect with an automatic anaphora resolution machine because they are not marked by easily identifiable elements as in comparison to the other three subtypes (*to*, verbs in *-ing*, verbs in *-ed*) (cf. Quirk et al. 2012: 992, 995).

Non-finite clauses in general typically occur as adverbials in complex sentences, or are used in postmodification, usually of noun phrases (cf. Aarts & Aarts 1986: 156; Quirk et al. 2012: 993, 1263-1274). Each of the non-finite clause types will now be discussed in more detail.

(252) What **they** did was (to) repair the pipe.

3.12.1 *To*-infinitive clauses

3.12.1.1 Anaphoric/cataphoric and non-anaphoric use with regard to clause and phrase functions

To-infinitive clauses are clauses beginning with *to*, which are usually followed by a verb. They occur as adverbials in complex sentences without (example (253)) or with a subject introduced by *for* (example (254)). They are relevant as anaphors only if the subject in this non-finite clause is not present (cf. Quirk et al. 2012: 1003-1005). For instance, Biber et al. (2007: 633) maintain that most *to*-infinitive clauses do not include an explicit subject. Non-finite clauses as adverbials can also occur together with subordinators. Quirk et al. (2012) explain:

Nonfinite [...] clauses are subordinate by virtue of the absence of a finite verb as the verb element of the clause. They are, however, sometimes introduced by a subordinator, which generally signals the clause to be adverbial. (ibid.: 1003)

The following subordinators are common for *to*-infinitive clauses: *as if, as though, in order, so as, whether ... (or), with, without*. *With* and *without* have to be followed by a noun phrase, which is not automatically the subject. In the case of *whether ... (or)* the subject, if not present in the *to*-infinitive clause, is the same as the subject of the superordinate clause (cf. Quirk et al. 2012: 1003-1005).

If the nominal *to*-infinitive clause itself is the subject or occurs as the extra-proposed subject, it is frequently non-anaphoric (example (255)). Nominal *to*-infinitive clauses are semantically equivalent to *that*-clauses. They usually express a proposal that would be paraphrased with *should* in *that*-clauses (example (256)), but it is also possible to use them for facts that are considered to be true or for events that have already happened. Furthermore, a *to*-infinitive clause can be found as a postmodification in noun phrases (example (257)) and in adjective phrases, in which they are also nominal clauses (example (258)) (cf. Aarts & Aarts 1986: 86, 117, 121, 160-164; Biber et al. 2007: 198-199; Huddleston 2010d: 1264; Quirk et al. 2012: 150-151, 993, 1061-1063).

- (253) To understand the problem, **Toby** needs to gather more information first.
- (254) For Cathy *to* be on time, she should be catching the earlier train.
- (255) *To* be on time is not necessary.
- (256) a) It's natural for mum *to* be with him.
b) It's natural that mum should be with him.
- (257) **Peter's** dream to travel to the moon may soon become reality.
- (258) **Dad** is too proud to admit he has made a mistake.

With regard to postmodifications of adjectives, anaphoric as well as non-anaphoric uses are found. Quirk et al. (2012) distinguish between seven types of constructions where a *to*-infinitive clause postmodifies an adjective as subject complement. Five of these constructions are anaphoric, the other three types are usually non-anaphoric. Quirk et al. (2012) state for these constructions:

In Types (i-iv) the subject of the main clause [...] is also the subject of the infinitive clause. [...] For Types (v-vii), on the other hand, the subject of the infinitive is unspecified, although the context often makes clear which subject is intended. [However,] [i]n these types it is possible to insert a subject preceded by *for* [...]. (ibid.: 1226-1227)

This means that the types v to vii are non-anaphoric, whether the *to*-clause contains a subject (example (259)) or not (example (260) a)). The first type, i.e. type v in Quirk et al., is found in example (260) a). A reformulation with *to handle* at the beginning of the clause ((260) b)) or a paraphrasing resulting in an extraposition ((260) c)) is possible with this construction. Adjectives occurring in such constructions “refer to degrees of ease or comfort” (Quirk et al. 2012: 1229). These are the adjectives *awkward*, *convenient*, *difficult*, *easy*, *hard*, *impossible*, *nice*, *pleasant*, *tough*, *tricky* and *unpleasant* (see Table 24).

The next type (type vi) is found in example (261) a). The infinitive clause in this construction can usually be left out ((261) b)) or substituted by a passive ((261) c)) without any major changes of meaning. Examples of such adjectives are *available*, *fit*, *free*, *frosty*, *ready*, *soft*, *sufficient*. These *to*-infinitive clauses can also end in a preposition (example (262)). Unfortunately, Quirk et al. do not provide a comprehensive list of adjectives concerned.

Finally, the last type (type vii) occurs in extraposition, as in example (263). Here, the anticipatory subject *it* introduces the sentence. Adjectives taking this construction are, for instance, *essential*, *fortunate*, *important*, *lucky*, *possible*, *strange*, *surprising* and *vital*. Additionally, adjectives “chiefly naming evaluative attributes of persons” (Quirk et al. 2012: 1230) are possible with type vii. These are *careful*, *careless*, *crazy*, *foolish*, *greedy*, *mad*, *nice*, *silly*, *unwise*, *wise*, *wonderful* and *wrong*. If an explicit subject is present with these items, the subject is introduced by an *of*-phrase instead of a *for*-phrase (example (264)) (cf. Huddleston 2010d: 1193; Quirk et al. 2012: 1226-1231).

(259) Robin is difficult for my uncle *to handle*.

(260) a) Robin is difficult *to handle*.

b) *To handle* Robin is difficult.

c) It is difficult *to handle* Robin.

(261) a) The towel is soft *to touch*.

b) The towel is soft.

c) The towel is soft *to be touched*.

(262) Susan is easy *to talk to*.

(263) It is important *to do* your homework.

(264) It is wrong of Jane not *to tell* him.

Table 24: *To*-infinitive-clause postmodification of adjectives

Type v: <i>Robin is difficult to manage.</i>	<i>awkward</i> <i>convenient</i> <i>difficult</i> <i>easy</i> <i>hard</i> <i>impossible</i>	<i>nice</i> <i>pleasant</i> <i>tough</i> <i>tricky</i> <i>unpleasant</i>
Type vi: <i>The towel is soft to touch.</i>	<i>available</i> <i>fit</i> <i>free</i> <i>frosty</i>	<i>ready</i> <i>soft</i> <i>(in)sufficient</i>
Type vii: <i>It is wrong not to tell him.</i>	<i>essential</i> <i>fortunate</i> <i>important</i> <i>lucky</i> <i>possible</i> <i>strange</i> <i>surprising</i> <i>vital</i>	<i>careful, careless</i> <i>crazy</i> <i>foolish</i> <i>greedy</i> <i>mad</i> <i>nice</i> <i>silly</i> <i>unwise, wise</i> <i>wonderful</i> <i>wrong</i>

With regard to the antecedent, Huddleston (2010d) argues: “In general, the recovery of the understood subject is determined by semantic principles, not rules of syntax. But in some cases the matter is more grammaticalised” (ibid.: 1260). Later he adds: “[Some non-finite clauses] are syntactically related to the main clause in that the missing subject is controlled by the subject of the main clause” (ibid.: 1266). Because of this, the antecedent can often be derived from the sentence, depending on the function in which the non-finite clause occurs. If the *to*-infinitive clause is direct object without its own subject, the antecedent is always the subject of the superordinate clause (example (265)). If the *to*-infinitive clause follows an indirect object (example (266)), the preceding object is the antecedent of the anaphor. The anaphor *to* in subject complement and appositive use usually refers to the subject of the superordinate clause, often only to the specifying determiner as in examples (267) and (268) (cf. ibid.: 1260).

The antecedent in postmodifications is as follows: as postmodifications of nouns, the anaphors refer to the part of the noun phrase preceding the postmodification. Paraphrasing such *to*-infinitive clauses, a modal interpretation with *should*, for example, might occur. If an adjective is postmodified, however, the antecedent is the subject of the superordinate clause (example (258)), except

for cases where this subject is a prop *it*, as in example (269), or existential *there*. *To*-infinitive clauses in the latter cases imply an indefinite subject or an *I* of the speaker, i.e. no referential link can be found in the text (cf. Quirk et al. 2012: 993, 995, 1061-1062, 1185-1187, 1196, 1215-1216, 1226-1229, 1265-1269).

Finally, cataphors frequently occur with these non-finite clauses, especially in adverbial function. Example (253) is an instance with a cataphor (cf. *ibid.*: 910).

- (265) **Anne** likes to read books by Ken Follett.
- (266) She told **George** to feed the dog.
- (267) **Dave's** solution would be to go by bus.
- (268) **Linda's** plan, to learn more than others, requires much ambition.
- (269) It is not wise *to* leave your luggage unattended.

3.12.1.2 Further non-anaphoric uses

A non-intelligent anaphora resolution system has also to mark off uses of *to* in other contexts than non-finite clauses. First, *to* works as preposition, as the second *to* in example (270). Second, *to* is non-anaphoric as prepositional adverb, e.g. *walk to and fro* (cf. Quirk et al. 2012: 715). Third, *to* is also not anaphoric if it is part of verbs such as *ought to*. This third non-anaphoric use should now be discussed in more detail.

Using the classification of Quirk et al. (2012: 136-148), verbs that include such non-anaphoric *to* are marginal modals (*ought to*, *used to*), modal idioms (*be to*, *have got to*), semi-auxiliaries (e.g. *be able to*, *have to*) and catenatives (e.g. *happen to*). Quirk et al. (2012) do not provide a finite list of verbs concerned with semi-auxiliaries and catenatives but only examples of important verbs (see Table 25). The items given for semi-auxiliaries are: *be able to*, *be about to*, *be apt to*, *be bound to*, *be due to*, *be going to*, *be likely to*, *be meant to*, *be obliged to*, *be supposed to*, *be willing to*, *have to* (see first *to* in example (270)). For practical purposes, as the verbs to be excluded have to be defined explicitly, only the verbs listed above are considered non-anaphoric in the case of semi-auxiliaries.

For catenatives, Quirk et al. (2012: 146-147) list the following items: *appear to*, *come to*, *fail to*, *get to*, *happen to*, *manage to*, *seem to*, *tend to*, *turn out to*. But yet, Aarts & Aarts (1986: 161-164) treat examples listed with catenatives as “predicator complements” where the verb *fail*, for instance, is complemented by a *to*-infinitive clause. Quirk et al. (2012) also acknowledge for catenatives: “Such constructions have meanings related to aspect or modality, but are nearer to main verb constructions than are semi-auxiliaries” (*ibid.*: 146). Likewise, Hud-

dleston (2010d) explains for catenative verbs: “In many cases the non-finite complement has a finite alternant or near-alternant” (ibid.: 1226), which is a typical feature of anaphoric non-finite clauses. As a result, catenatives are here treated as verbs plus non-finite clauses and therefore as anaphoric.

Table 25: Non-anaphoric *to* with verbs

Marginal modals	<i>ought to</i> <i>used to</i>		
Modal idioms	<i>be to</i> <i>have got to</i>		
Semi-auxiliaries	<i>be able to</i> <i>be about to</i> <i>be apt to</i> <i>be bound to</i>	<i>be due to</i> <i>be going to</i> <i>be likely to</i> <i>be meant to</i>	<i>be obliged to</i> <i>be supposed to</i> <i>be willing to</i> <i>have to</i>
Other “fixed expressions”	<i>to begin (with)</i> <i>to cap it (all)</i> <i>to conclude</i>	<i>to continue</i> <i>to recap</i> <i>to recapitulate</i>	<i>to start (with)</i> <i>to summarise</i> <i>to sum up</i>

All items of marginal modals, modal idioms and semi-auxiliaries are, however, only non-anaphoric, if really occurring as such. That means, not every case where, for example, *be* and *to* are used in the combination *be to*, this is automatically a non-anaphoric use. Example (271) shows an instance in which *to*, although preceded by a form of *be*, is anaphoric. Therefore, it is important to mention in which case the following marginal modals, modal idioms and semi-auxiliaries are non-anaphoric. To start with, *used to* “denotes a habit or a state that existed in the past” (Quirk et al. 2012: 140). Furthermore, Quirk et al. (2012) describe the non-anaphoric use of *be to* as “an idiom expressing futurity, with varied connotations of ‘compulsion’, ‘plan’, ‘destiny’, etc, according to context” (ibid.: 143). Finally, *have to* has a similar meaning to *must* (cf. ibid.: 145).

(270) He has *to* walk *to* school every Friday.

(271) **John**’s task is to reorganise the department.

There are also some debatable uses. *To* can be part of multi-word verbs, for example, *listen to*. As such verbs are rarely followed by an infinitive and because no exhaustive list of them exists, they are not considered with non-anaphoricity. Furthermore, some fixed expressions, e.g. *to begin (with)*, *to cap it (all)*, *to conclude*, *to continue*, *to recap*, *to recapitulate*, *to start (with)*, *to summarise*, *to sum up* are non-anaphoric. Finally, instances are excluded if an -ing-

participle verb follows *to*, e.g. *prior to receiving*, as potentially anaphoric *to* has to be followed by an infinitive. Such cases could, however, be an example of an *-ing*-participle clause (cf. Quirk et al. 2012: 150, 1069, 1150-1161).

3.12.1.3 Summary

To-infinitive clauses can occur as adverbial, direct object, subject complement, in appositive use and sometimes as subject. *To*-infinitive clauses as postmodifications are possible in noun and adjective phrases. The antecedents are often the nouns preceding, the specifying determiner and the subjects, especially with adjective phrase postmodification. Cataphors are often found if non-finite clauses function as adverbials. Explicit subjects are introduced by *for*, in which case the non-finite clause is non-anaphoric. “Implicit” subjects, i.e. antecedents, are often the subjects of the superordinate clauses. Non-anaphoric uses include instances with understood or unspecified speaker or hearer. Non-anaphoric *to* can occur as preposition, prepositional adverb, and conjunction, or as part of marginal modals, modal idioms, semi-auxiliaries, and of fixed expressions, such as *to sum up*.

3.12.2 *-ing*-participle clauses

3.12.2.1 Anaphoric/cataphoric and non-anaphoric use with regard to clause and phrase functions

Verbs with *-ing*-inflection introduce *-ing*-participle clauses. If a non-finite clause has its own subject, it is non-anaphoric. Subjects are often preceded by a preposition (example (272)). The subject of an *-ing*-participle clause can also be in the genitive case, especially with pronouns denoting a personal reference. This, however, constitutes a formal style (example (273)). An example of an anaphoric *-ing*-participle clause is (274) (cf. Quirk et al. 2012: 150-151, 910, 993).

-ing-participle clauses can function as adverbial in complex sentences (examples (272) and (274)). The conjunctions that are used to introduce such *-ing*-participle clauses are: *although*, *as if*, *as though*, *even if*, *if*, *once*, *though*, *unless*, *until*, *when(ever)*, *whether ... or*, *while*, *whilst*, *with*, *without*. After *with* and *without* a noun phrase has to occur, though, this noun phrase is not automatically the subject of the *-ing*-participle clause. Additionally, *after*, *before* and *since* are used. These items are, according to Quirk et al. (2012: 1005-1006), better regarded as prepositions. As with *to*-infinitive clauses, *-ing*-participle clauses frequently take cataphoric antecedents if they occur in sentence-initial position as

adverbials (example (274)) (cf. Stirling & Huddleston 2010: 1477; Quirk et al. 2012: 1063-1064, 1194).

As direct object, *-ing*-participle clauses contrast with *to*-infinitive clauses. Quirk et al. (2012) explain their difference as follows:

As a rule, the infinitive gives a sense of mere 'potentiality' for action, as in *She hoped to learn French*, while the [-*ing*-]participle gives a sense of the actual 'performance' of the action itself, as in *She enjoyed learning French*. (ibid.: 1191)

In addition, *-ing*-participle clauses occur as postmodifications in noun phrases (example (275)) (cf. Aarts & Aarts 1986: 117-121, 126, 160-161; Quirk et al. 2012: 1063-1067, 1230-1231). Furthermore, *-ing*-participle clauses only occur in rare use as object complements, in which case they are non-anaphoric (example (276)). Similarly, nominal *-ing*-participle clauses in subject position (example (277)) are also often non-anaphoric. Additionally, *-ing*-participle clauses are not anaphoric if they occur in extraposition (example (278)), although this is mostly restricted to informal speech (cf. Biber et al. 2007: 199-200; Quirk et al. 2012: 1392-1393). They are in this case introduced by *it*.

- (272) With the children *watching* TV, we could now talk about this problem you mentioned.
- (273) The students were very understanding. I was immensely relieved about their *accepting* my apologies.
- (274) *Lying* in the hammock, **Frank** fantasised about this girl he had met.
- (275) **The students** *working* on their theses attended a course about writing skills.
- (276) Susan regarded the birth of her child as *being* the best thing that could have happened to her.
- (277) *Walking* alone on the streets at night can be dangerous.
- (278) It's no use *arguing* about that.

The antecedent of *-ing*-participle clauses is often the subject of the superordinate clause. *-ing*-participle clauses that occur as direct object and follow an indirect object take the preceding object as antecedent. Noun phrases that are postmodified by *-ing*-participle clauses have the preceding part of the noun phrase as antecedent. Sometimes, the antecedent is found in the determinative of a noun phrase, as in example (279), where the *-ing*-participle clause is the subject.

As with *to*-infinitive clauses, the subject can be left implicit in *-ing*-participle clauses and thus be a case of non-anaphoricity. Similarly, the antecedent

with some verbs is not the subject of the superordinate clause, but is indefinite, i.e. non-anaphoric. As a consequence, not Dr Miller eats fruit and vegetables every day in example (280), but he recommends this practice to other people. The verbs belonging to this category are, according to Quirk et al. (2012: 1189-1190), *discourage, envisage, forget, involve, justify, permit, recall, recommend, remember, risk* and *save*. Furthermore, the implied subject can be generic (example (277) and (281)) or arise from the situation. The distinction between anaphoric and non-anaphoric interpretations is not always that clear. In some circumstances, the subject of non-finite clauses can be interpreted in two ways and thus be ambiguous from the sentence structure itself. Example (282) can be interpreted as *Tom detests it when he lies* or alternatively, with an unspecified subject, *Tom detests it when people lie* (cf. *ibid.*: 1065-1066, 1189, 1194-1195, 1202).

Finally, an *-ing*-participle clause can usually be paraphrased as a finite clause. However, the corresponding finite clause does not necessarily result in progressive aspect. Quirk et al. (2012) state:

Unlike *-ed* participle [...] clauses, however, these *-ing* participle clauses cannot be regarded as strictly elliptical clauses, since the *-ing* participle does not necessarily represent a progressive form in the equivalent finite clause. The *-ing* participle neutralizes that aspectual distinction [...]. (*ibid.*: 1005)³⁶

Therefore, example (283) paraphrases in a finite clause as *The apparatus which examines / is examining the heartbeat of new-borns attracts the attention of the experts*, which means that both simple as well as progressive aspects are possible without any further context. The tense is that of the clause in which the *-ing*-participle clause is embedded or it has to be inferred from the context. The paraphrase with a finite clause can have a modal or non-modal interpretation. In the previous example it is non-modal, but in example (281) the modal rephrasing *People/We/One could not visit the production hall* is common (cf. *ibid.*: 1066-1067, 1263-1264).

(279) Insulting the student was not **Sam**'s intention.

(280) Dr Miller recommends *eating* fruit and vegetables every day.

(281) There was no *visiting* the production hall.

(282) **Tom** detests lying.

³⁶ This argument can also serve as another justification for why non-finite clauses are not seen as ellipses here.

- (283) **The apparatus examining** the heartbeat of new-borns attracts the attention of the experts.

3.12.2.2 Further non-anaphoric uses

Non-finite verbs used in anaphoric *-ing*-participle clauses have to be marked off from other verbs ending in *-ing*. These are *-ing*-participles that are part of complex finite verb phrases and follow *be* (example (284)), *have* or modal auxiliary verbs. Furthermore, verb phrases containing *doing* are not considered here as these are items that are part of the category verb phrases with *do* and combinations. Other words ending in *-ing* are especially nouns (e.g. *thing*) or verbs used as gerunds, i.e. “verb forms with a noun-like role” (Matthews 2007: 158) (example (285)); full verbs in base form (e.g. *sing*); and adjectives (e.g. *interesting*). It is sometimes difficult to distinguish between nouns ending in *-ing* and verbs in *-ing*-participle. For instance, *driving* is an anaphoric *-ing*-participle in example (286) a) and a noun that is non-anaphoric in b) (cf. Quirk et al. 2012: 97, 151-152, 1063-1065).

- (284) We are *testing* his newest invention.

- (285) *Swimming* is one of her favourite pastimes.

- (286) a) **Nasim** likes *driving* fast cars.

- b) Sue's *driving* is horrible.

3.12.2.3 Summary

A non-anaphoric interpretation is likely in subject and object complement position. If the *-ing*-participle clause contains an explicit subject, this subject is often introduced by a preposition. Explicit subjects can also occur as genitives in noun phrases. Such clauses are then non-anaphoric. Furthermore, *-ing*-participle clauses in adverbial function take cataphoric antecedents, if they are at the beginning of sentences. In addition, for *-ing*-participle clauses in subordination the antecedent frequently takes the function of the subject in a superordinate clause, and in some cases it is the object. The antecedent is not always a whole phrase but can also be a noun phrase except for its postmodification.

Other non-anaphoric *-ing*-participle clauses are such with unspecified subjects. In addition, the *-ing*-ending of non-finite verbs has to be distinguished from other non-anaphoric uses: *-ing*-participles in complex finite verb phrases; gerunds; and full verbs in base form, nouns and adjectives ending in *-ing*.

3.12.3 -ed-participle clauses

-ed-participle clauses are typically characterised by the -ed-ending of verbs. Nevertheless, irregular verbs used as past participle do not show this ending. For these irregular forms, Quirk et al. (2012: 114-120) provide a comprehensive list. The items taken from this list are presented in Table 26.³⁷ It should be pointed out that the forms that are irregular in their past forms but have a regular -ed-participle are not included. Furthermore, all regular forms that occur as alternatives to irregular forms are left out because they can be identified with their -ed-inflection. Moreover, the following items are excluded from this list although they are irregular: *bled, bred, fed, fled, led, misled, overfed, pled, shed, shred, sped, wed*. These forms are detected by automatic systems as well, because they end in -ed, even if this ending is not an inflection. Finally, *been* and *had* are omitted because it is doubtful if they can work as anaphors in -ed-participle clauses (cf. *ibid.*: 150-151).

Table 26: Irregular -ed-participle forms

abode	felt	misdealt	rewritten	stunk
arisen	fought	misgiven	rid	strewn
awoken	found	misheard	ridden	stridden, strid,
borne	fit	mislaid	rung	strode
beaten, beat	flung	misspelt	risen	struck
become	flown	misspent	run	strung
befallen	foreborne ³⁸	mistaken	sawn	striven
begotten	forbidden, forbid	misunderstood	said	sworn
begun	forecast	mown	seen	sweat
beheld	foreseen	offset	sought	swept
bent	foretold	outbid,	sold	swollen

³⁷ Huddleston & Pullum (2010) do not include a list of irregular verbs. If consulting dictionaries, some irregular verbs that are not part of Quirk et al. (2012) are found. For instance, the *Oxford Advanced Learner's Dictionary of Current English* (2010) lists the following irregular verbs that do not occur in Quirk et al. (2012): *babysat, bespoken, breastfed, browbeaten, dripped, floodlit, inlaid, input, intercut, interwoven, mishit, misread, output, outsold, overdrawn, overflowed, overheard, overlaid, overlain, overpaid, oversold, overspent, overwritten, preset, proofread, redrawn, reheard, resold, resat, retaken, simulcast, spotlight, stove, sublet, typecast, typeset, undercut, underlain, underpaid, undersold, underwritten* (cf. Hornby 2010: reference section 2-4).

³⁸ The *Oxford Advanced Learner's Dictionary of Current English* (2010) lists *forborne* instead of *foreborne* (cf. Hornby 2010: reference section 2-4).

bereft	forgotten, forgot	outbidden	sent	swum
besought	forgiven	outdone	set	swung
beset	forgone	outfought	sewn	taken
bestriden,	forsaken	outgrown	shaken	taught
bestrid, bestrode	forsworn	outrun	shaven	torn
bet	frozen	outshone	shorn	telecast
betaken	gainsaid	overborne	shewn	told
bade, bid, bidden	got, gotten	overcast	shone	thought
bound	given	overcome	shod	thriven
bitten, bit	gone	overdone	shot	thrown
blown	ground	overeaten	shown	thrust
broken	grown	overhung	shrunk	trodden, trod
brought	hamstrung	overridden	shriven	unbent
broadcast	hung	overrun	shut	unbound
built	heard	overseen	sung	underbid,
burnt	hove	overshot	sunk	underbidden
burst	hewn	overslept	sat	undergone
bust	hidden, hid	overtaken	slain	understood
bought	hit	overthrown	slept	undertaken
cast	held	partaken	slid	underwritten
caught	hurt	paid	slung	undone
chidden, chid	inset	proven	slunk	unfrozen
chosen	kept	put	slit	unmade
cleft, cloven	knelt	quit	smelt	unwound
clung	knit	read	smitten	upheld
come	known	rebound	sown	upset
cost	laid	rebuilt	spoken	woken
crept	leant	recast	spelt	waylaid
cut	leapt	redone	spent	worn
dealt	learnt	relaid	spilt	woven
deepfrozen	left	remade	spun	wept
dug	lent	rent	spat, spit	wet
done	let	repaid	split	won
drawn	lain	reread	spoilt	wound
dreamt	lit	rerun	spread	withdrawn
drunk	lost	reset	sprung	withheld
driven	made	restrung	stood	withstood
dwelt	meant	retold	stolen	wrung
eaten	met	rethought	stuck	written
fallen	miscast	rewound	stung	

3.12.3.1 Anaphoric/cataphoric and non-anaphoric use with regard to clause and phrase functions

-ed-participle clauses can include a subject (example (287)) or not (example (288)). As with other non-finite clauses, only non-finite clauses without explicit subjects are anaphoric. With regard to the functions, *-ed*-participle clauses can occur as adverbials, in which case they can be introduced by the following conjunctions: *although, as* (for manner), *as if, as soon as, as though, even if, if, once, though, unless, until, when(ever), where(ever), whether ... or, while, whilst, with, without*. With the last two items a noun phrase has to follow, which is not necessarily the subject. A cataphoric interpretation is also possible (example (288)) (cf. Quirk et al. 2012: 910, 993, 1003-1005).

Furthermore, if *-ed*-participle clauses postmodify noun phrases, they can be paraphrased with finite relative clauses. As a result, example (289) can be reformulated: *The goals that were/have been scored by the team were impressive* (cf. Aarts & Aarts 1986: 117-118; Quirk et al. 2012: 1125, 1264-1265). For the detection of the antecedent, the conditions of *to*- and *-ing*-participle clauses apply. This means that the antecedent of *-ed*-participle clauses is often the subject of the superordinate clause. With regard to noun phrases, the part before the postmodification of the *-ed*-participle clause is the antecedent (cf. Quirk et al. 2012: 1004-1005).

(287) With the members *selected*, the conference could begin.

(288) Prepared for massive criticism, **the chairman** opened the meeting.

(289) **The goals** scored by the team were impressive.

In contrast to *-ing*-participle clauses (example (283)), *-ed*-participle clauses can show progressive aspect. This circumstance is illustrated in example (290). Thus, (290) a) takes simple aspect and is paraphrased as *The bike that was/has been repaired by Frank belongs to me*. Example (290) b) reformulates *The bike that is being repaired belongs to me*. Furthermore, *-ing*- and *-ed*-participle clauses differ from each other in that the *-ing*-participle clause is associated with the active voice, the *-ed*-participle clause with the passive, as is obvious if comparing example (275) with (289) (cf. *ibid.*: 994-1005, 1264-1265).

(290) a) **The bike** repaired by Frank belongs to me.

b) **The bike** being repaired by Frank belongs to me.

3.12.3.2 Further non-anaphoric uses

A few further non-anaphoric uses need mentioning. Obviously, a simple resolution software would face difficulties differentiating between anaphoric *-ed*-participles and other items taking the ending *-ed* or one of the irregular *-ed*-participle forms. As for regular forms, non-anaphoric verbs with *-ed*-ending are participles in complex finite verb forms. Here, the participle follows modal auxiliary verbs; *have*, which signals perfective aspect (example (291)); or *be*, which signals passive voice. Another non-anaphoric use comes from regular verbs in past form (example (292)) and some regular verbs in base form (e.g. *feed*). Apart from verbs, other words, especially adjectives (e.g. *long-established*, *red*), but also some nouns (e.g. *seed*), can end in *-ed*. With regard to irregular forms, irregular *-ed*-participle forms are also not anaphoric in complex verb forms with modal auxiliaries, *have* and *be* (example (293)), which is closely comparable to regular *-ed*-participle verbs. Finally, if these irregular forms operate as adjectives, they are non-anaphoric as well (cf. Quirk et al. 2012: 96-98, 150-151).

(291) We have *played* tennis before.

(292) The man *carried* the pictures to the new gallery.

(293) The actress is *known* by all fans of the show.

3.12.3.3 Summary

-ed-participle clauses include items ending in *-ed* as well as irregular participle forms. Anaphoric *-ed*-participle clauses as adverbials and direct objects often take the subject of the superordinate clause as antecedent. With regard to noun phrases, the antecedent is the part of the noun phrase preceding the postmodification. Moreover, cataphors are common with sentence-initial *-ed*-participle clauses as adverbials.

Anaphoric participle clauses, whether with regular or irregular *-ed*-form, have to be distinguished from non-anaphoric forms in complex finite verb phrases and as adjectives. Regular *-ed*-ending items with a non-anaphoric use are past forms and, marginally, nouns. In case of an explicit subject within the participle clause or if the clause contains an *-ed*-item as object complement, this clause is also non-anaphoric.

3.12.4 Summary of *to*-infinitive, *-ing*-participle and *-ed*-participle clauses

In general, non-finite clauses are characterised and can thus be identified by verbs that are preceded by *to*, verbs ending in *-ing* or *-ed*. With *-ed*-participles, a number of irregular forms occur. The functions that anaphoric non-finite clauses can take are illustrated in Table 27. The subordinate conjunctions that can introduce non-finite clauses as adverbials are summarised in Table 28.

Table 27: Anaphoric use of non-finite clauses

	Clause function				Phrase function			
	Adverbial	Subject complement	Direct object	Object complement	Appositive use	Prepositional complement	Postmodification in noun phrases	Postmodification in adjective phrases
<i>to</i>	x	x	x ¹	-	x	-	x	x
<i>-ing</i>	x	x	x	-	x	x	x	x
<i>-ed</i>	x	-	x	-	x	-	x	-

¹ wh-element can precede *to*

Table 28: Conjunctions introducing non-finite clauses as adverbials

	<i>to</i>	<i>-ing</i>	<i>-ed</i>		<i>to</i>	<i>-ing</i>	<i>-ed</i>
<i>although</i>	-	x	x	<i>unless</i>	-	x	x
<i>as</i>	-	-	x	<i>until</i>	-	x	x
<i>as if</i>	x	x	x	<i>when(ever)</i>	-	x	x
<i>as soon as</i>	-	-	x	<i>where(ever)</i>	-	-	x
<i>as though</i>	x	-	x	<i>whether</i>	x	-	-
<i>even if</i>	-	x	x	<i>whether ... or</i>	x	x	x
<i>if</i>	-	x	x	<i>while</i>	-	x	x
<i>in order</i>	x	-	-	<i>whilst</i>	-	x	x
<i>once</i>	-	x	x	<i>with</i>	x	x	x
<i>so as</i>	x	-	-	<i>without</i>	x	x	x
<i>though</i>	-	x	x				

As to the antecedent, it is frequently the subject of the superordinate clause. If an indirect object precedes the non-finite clause in object function, this is the antecedent. As for noun phrase postmodification, the part of the noun phrase before the postmodification is usually the antecedent (cf. also Quirk et al. 2012: 994, 1120-1127, 1271-1272). As adverbial at the beginning of a sentence, the ante-

cedent takes a cataphoric interpretation. Finally, *non-finite clause* anaphors show a coreferential relationship with their antecedents and therefore belong to the coreferential category.

With regard to non-anaphoricity, items that look the same as anaphoric verbs of non-finite clauses but are in fact non-anaphoric can be found. Furthermore, a *non-finite clause* item shows a non-anaphoric interpretation if it contains an overt subject, i.e. a subject on its own. Moreover, non-anaphoric items can refer to addresser or addressee, either explicitly to *I*, *you*, *we*, or to an implicit subject, e.g. if items occur in sentences that contain an imperative form in the main clause. These non-anaphoric characteristics are summarised in Table 29.

Table 29: Non-anaphoric use of non-finite verbs and other forms looking like non-finite verbs

	In sub- ject posi- tion	In extra- posi- tion	Verbs with <i>to</i>				Simple finite verb phrase		Complex finite verb phrases		
			Margi- nal mo- dals	Modal idioms	Semi- auxi- liaries	Fixed ex- press- ions	Pre- sent form	Past form	<i>be</i>	<i>have</i>	Modal auxi- liary verbs
<i>to</i>	x	x	x	x	x	x	-	-	-	-	-
<i>-ing</i>	x ¹	x	-	-	-	-	x	-	x	x	x
<i>-ed</i>	x	-	-	-	-	-	x	x	x	x	x
Irregular <i>-ed</i>	x	-	-	-	-	-	x	x	x	x	x

	Overt sub- jects	<i>you</i> etc. as ante- cedent	Impe- rative	Postmodi- fication of adjectives			Ge- runds	Nouns	Ad- jec- tives	Prepo- sitions	Pre- posi- tional ad- verbs	Other fixed ex- press- ions
				V	VI	VII						
<i>to</i>	x	x	x	x	x	x	-	-	-	x	x	x
<i>-ing</i>	x	x	x	-	-	-	x	x	x	x	-	-
<i>-ed</i>	x	x	x	-	-	-	-	x	x	-	-	-
Irregular <i>-ed</i>	x	x	x	-	-	-	-	x	x	-	-	-

¹ anaphoric use is possible, but rare

3.13 Conclusion

Twelve types of anaphors relevant for computational anaphora resolution have been identified. These types and their items are summarised in Table 30.

Table 30: Anaphor types and their items in English

Anaphor type	Subcategories	Anaphor items
Central pronouns	Personal	<i>he, she, it, they, him, her, them, (we), (us),</i>
	pronouns	<i>he/she, he or she, s/he, (s)he, him/her, him or her</i>
	Possessive	<i>his, her, hers, its, their, theirs, (our), mine, ours, yours,</i>
	pronouns	<i>his/her, his/hers, his or her, his or hers</i>
	Reflexive	<i>himself, herself, itself, themselves, (ourselves),</i>
	pronouns	<i>himself/herself, himself or herself, themself</i>
Reciprocal pronouns		<i>each other, one another</i>
Demonstrative pronouns	Dependent function	<i>this, that, these, those</i>
	Independent function	<i>this, that, these, those</i>
Relative pronouns		<i>who, whom, which, whose, that, zero that</i>
Adverbs		<i>here, there, then, where, when, while, why, whence, whereby, wherein, whereupon</i>
Noun phrases with a definite article		<i>the</i>
Proper names	Personal proper names	
	Other proper names	
Indefinite pronouns		<i>one, ones, other, others, another, both, all, each, enough, several, some, any, either, neither, none, many, much, more, most, few, fewer, fewest, little, less, least</i>
Other forms of coreference and substitution		<i>the same, such, so</i>
Verb phrases with <i>do</i> and combinations with <i>so, this, that, it</i> and <i>the same (thing)</i>	Simple forms	<i>do, does, did, doing, done, don't, do not, doesn't, does not, didn't, did not</i>
	Complex forms	<i>do so, does so, did so, doing so, done so, do this, does this, did this, doing this, done this, do that, does that, did that, doing that, done that, do it, does it, did it, doing it, done it, do the same (thing), does the same (thing), did the same (thing), doing the same (thing), done the same (thing)</i>

Ellipses	Nominal ellipsis
	Verbal ellipsis
	Clausal ellipsis
Non-finite clauses	<i>to, -ing, -ed</i>

To round the picture off, the twelve anaphor types are now examined regarding the six features that have been outlined in chapter 2. These six features are: consideration of anaphoric and cataphoric directions; necessity of explicit antecedents; interpretation of anaphors in relation to antecedents; consideration of coreferential, substitutional and other relationships between anaphor and antecedent; anaphors as reductive and/or non-repetitive forms; and anaphors as cohesive devices (see Table 31).

As to the first characteristic, the items classified as anaphors are in a large part anaphoric. A cataphoric interpretation occurs only with some items in specific contexts. The most important cataphoric devices are independent *this* and *here*. Halliday & Hasan (2008) state: “This use of *this* [i.e. in independent function], together with the parallel use of *here* [...], is the only significant instance of cataphoric cohesion in English” (ibid.: 68). Furthermore they stress: “structural cataphora is very common, especially with the definite article [...], but it is simply a realization of a grammatical relationship within the nominal group and has no cohesive, text-forming function” (ibid.: 68). As a result, a cataphoric interpretation is of minor importance here.

Next, all antecedents of the anaphors listed here have to occur in the same text, otherwise they are classified as non-anaphoric. This goes back to the fact that an anaphora resolution system needs to find an antecedent in the text. Furthermore, anaphora resolution systems have to distinguish items working as anaphors from those instances in which these items are not anaphoric. This is not a trivial task. The grammatical features listed with the individual types of anaphors help in categorising items into anaphoric and non-anaphoric. Additionally, these features are of great importance for anaphora resolution systems in finding the correct antecedent of each anaphor.

Furthermore, an anaphor is interpreted in relation to its antecedent. It depends on the type of anaphor as to in how far the antecedent is necessary for determining the referent of the anaphor. Proper names, noun phrases with a definite article and demonstrative pronouns in dependent function are on the one end and carry a lot of information regarding the determination of the referent themselves. On the other end we find ellipses. Between these two poles are central pronouns, reciprocal pronouns, relative pronouns, adverbs, other types of coreference and substitution, demonstrative pronouns in independent func-

tion, indefinite pronouns, verb phrases with *do* and combinations with *so*, *this*, *that*, *it*, and *the same (thing)* and non-finite clauses.

A similar classification holds for the fact whether the anaphor is more a case of reduction or occurs in order to avoid repetition. Proper names and noun phrases with definite articles are means to vary and so to avoid repetition. Ellipses are prototypical examples of reduction. The other types fall in between these two poles. Another relevant point here is the distinction between grammatical and lexical cohesion. A large part of anaphor types belong to grammatical cohesion; those that are part of lexical cohesion are proper names and noun phrases with a definite article.

With regard to a coreferential or substitutional relationship between anaphor and antecedent, the following aspects are worth mentioning: reflexive pronouns, reciprocal pronouns and proper names are coreferential. Although non-finite clauses show a special coreferential relationship with their antecedents, they also belong to the category of coreference. Furthermore, dependent demonstrative pronouns, adverbs, noun phrases with a definite article and *such* are coreferential, except for anaphors that refer to clauses. They then belong to the third, miscellaneous category, which includes items that are both or neither coreferential nor substitutional. Similarly, relative pronouns, *such*, the verb phrase anaphors *do this*, *do that* and *do it* are counted as part of the miscellaneous category if referring to a clause or sentence.

Personal pronouns are also coreferential, but fall into the miscellaneous category, if the antecedent includes a quantifier and if *it* refers to a whole clause or one or more sentences. Determinative possessive pronouns are coreferential, but are classified into the miscellaneous category if the antecedent includes a quantifier or an interrogative pronoun. Independent possessive pronouns are coreferential and substitutional and so belong to the miscellaneous category, apart from first and second person pronouns, which only show substitution. The independent demonstrative pronouns *that* and *those* can also be substitutional. Additionally, relative pronouns are usually coreferential, except for a reference to antecedents that are direct objects of *have (got)*, in which case they are substitutional. Indefinite pronouns, *the same*, *so* and ellipses show substitution. Finally, verb phrases with *do* and combinations with *so*, *the same (thing)* are also substitutional, but the combinations of *do* with *this*, *that*, *it* are coreferential.

Now that the types of anaphors have been identified and marked off from non-anaphoric instances, the focus can move to analysing the frequency of each of these types in the next chapter.

Table 31: Anaphor types with regard to the six conditions

Condition		Direction	Antecedent		Interpretation of anaphor		Relationship		Anaphor		Cohesion		
Anaphor type	Condition	Ana-phoric	Cata-phoric	In the same text	Antecedent absolutely necessary	Antecedent not absolutely necessary	Coreference	Substitution	Miscellaneous category	Reduction	Repetition on avoidance	Gram-matical	Lexical
Central pronouns		x	x	x	(x)	-	x	x	x	x	(x)	x	-
	Reciprocal pronouns	x	(x)	x	(x)	-	x	-	-	x	(x)	x	-
	Demonstrative pronouns	x	x	x	(x)	x	x	x	x	(x)	(x)	x	-
Relative pronouns		x	-	x	(x)	-	x	(x)	x	x	(x)	x	-
	Adverbs	x	(x)	x	(x)	-	x	-	x	x	(x)	x	-
Noun phrases with a definite article		x	-	x	-	x	x	-	x	-	x	-	x
	Proper names	x	-	x	-	x	x	-	-	-	x	-	x
Indefinite pronouns		x	(x)	x	(x)	-	-	x	-	x	(x)	x	-
	Other forms of coreference and substitution	x	(x)	x	(x)	-	x	x	x	x	(x)	x	-
Verb phrases with do and combinations		x	x	x	(x)	-	x	x	x	x	(x)	x	-
	Ellipses	x	x	x	x	-	-	x	-	x	(x)	x	-
Non-finite clauses		x	x	x	(x)	-	x	-	-	x	(x)	x	-

