

**The German indefinite
pronoun *ein(er)*. Interpretation and
discourse linking**

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1 Introduction

1.1 The phenomenon

Sometimes the smallest words with almost no conceptual information can give the most interesting insights into the mechanisms and phenomena of a language. Indeed, indefinite pronouns seem to be a prime example of this idea. While their conceptual information is usually limited to the class they refer to (for example, *someone* refers to a person while *somewhere* refers to a place), they often indicate how and under what conditions or restrictions a discourse referent is introduced. Therefore, investigating indefinite pronouns can tell us a lot about phenomena such as specificity, reference, or polarity.

This dissertation is an in-depth investigation of one particular pronominal expression: the German indefinite pronoun *ein(er)*¹. The pronoun *ein(er)* was chosen as a research topic because it shows many different interpretations, some of which are anaphoric. It is therefore a good example to show that indefinite pronouns also play an important part in understanding discourse structure. More precisely, the investigation of *ein(er)* allows for a new perspective on pronominal discourse linking and will highlight different levels in discourse.

Some examples using the pronoun *ein(er)* can be seen below. (1a) shows a very typical context for an indefinite pronoun, with *einer* referring to an unspecified human being. However, *ein(er)* also occurs in other contexts where it refers to an antecedent in the previous text. In (1b), *eine* picks up an element from a previously introduced set (*three daughters*), and in (1c), *einen* refers to a non-human, discourse-new element belonging to the same nominal characteristic as the antecedent noun *Porsche*. In contexts like (1b) and (1c), I refer to *ein(er)* as an anaphoric pronoun.

- (1) a. Hörst du das? Ich glaube da kommt **einer**.
'Do you hear that? I think there's *someone* coming.'

¹ In this dissertation, I chose to use the notation *ein(er)*, combining the stem *ein* and the inflectional ending *er* in brackets, to refer to the discussed indefinite pronoun. I chose this notation to clearly differentiate the pronoun from the indefinite article as well as to highlight when my assumptions are made with regard to all inflected forms. In Chapters 5 and 6, for example, I will sometimes concentrate on the male form which is then written without brackets (*einer*).

- (1) b. Peter hat drei Töchter. **Eine** studiert Medizin in Mannheim.
 ‘*Peter has three daughters. **One** is studying medicine in Mannheim.*’
- c. Sandra hat sich einen Porsche gekauft. Nun wünscht Jan sich auch **einen**.
 ‘*Sandra has bought a Porsche. Now, Jan wants **one** too.*’

Thus, *ein(er)* behaves quite differently from many other typical indefinite pronouns. This is shown in (2) and (3), which repeat the same examples as in (1) but using the English indefinite pronoun *someone* or its German translation *jemand*. The respective a. examples work well and provide the same meaning as in (1), but (2b) and (2c) as well as (3b) and (3c) do not get the same interpretation. The indefinite pronoun here still refers to an unspecified human referent which makes the examples sound slightly incoherent. It seems that the interpretation of pronouns like *someone* and *jemand* is fixed in the lexicon and not as flexible as that of the pronoun *ein(er)*.

- (2) a. Do you hear that? I think there’s **someone** coming.
 b. Peter has three daughters. **Someone** is studying medicine in Mannheim
 c. Sandra has bought a Porsche. Now, Jan wants **someone**, too
- (3) a. Hörst du das? Ich glaube da kommt **jemand**.
 b. Peter hat drei Töchter. **Jemand** studiert Medizin in Mannheim.
 c. Sandra hat sich einen Porsche gekauft. Nun wünscht Jan sich auch **jemanden**.

Indefinite pronouns in general have been found to be a quite diverse group, covering a wide range of expressions and functions. So far, the research on indefinite pronouns mostly focuses on their formal make up (for example Haspelmath, 1997; Weiß, 2002) or concentrates on one of their many different functions (for an overview see Haspelmath, 1997), such as the literature on epistemic indefinites that mark knowledge of the speaker (for example Kratzer & Shimoyama, 2002; Alonso-Ovalle & Menéndez-Benito, 2003, 2015; Aloni & Port, 2010) or the literature on free choice items (for example Dayal, 1998; Horn, 2000; Giannakidou, 2001). For German, the linguistic literature seems to focus on diachronic development (Erben, 1950; Fobbe, 2004; Jäger, 2010) or dialectal variation (Glaser, 1993, 2008; Plank, 1994, 2002; Strobel, 2016, 2017). So far, however, barely any research has been done on the German pronoun *ein(er)*, and an in-depth investigation of its different interpretations is still missing (see however Zifonun, 2007).

At its core, this dissertation addresses the question of how indefinite pronouns participate in discourse linking. There is already an enormous body of linguistic literature investigating the role of pronouns in discourse, asking how the form of a referential expression relates to the activation status of its referent (for example, Givón, 1983; Ariel, 1990; Gundel et al., 1993), which factors determine how an ambiguous pronoun is resolved with a focus on prominence or accessibility of the antecedent (for example, Gernsbacher & Hargreaves, 1988; Crawley et al., 1990; Arnold, 1998, 2010; Almor & Nair, 2007; Kibrik, 2011; Jasinskaja et al., 2015), and how the type of the pronoun influences its interpretation (for example, Bosch et al., 2003; Kaiser & Trueswell, 2011; Schumacher et al., 2015). So, pronouns in general play an important role in understanding discourse structure. However, so far, the focus is put on definite and most often personal pronouns. In contrast, indefinite pronouns have been investigated with regards to their semantics and their ability to introduce a discourse referent, however they have not been used to understand discourse structure.

The examples in (1) as well as the rest of this dissertation however show, that this is a missed opportunity. Because, while indefinite pronouns cannot establish a coreferential anaphoric relation with an antecedent, *ein(er)* as an example shows that indefinite pronouns indeed do take part in discourse linking and anaphoric interpretations of indefinite pronouns should therefore be investigated in more detail. Through an in-depth investigation of the pronoun *ein(er)* and its many interpretations, this dissertation will investigate different discourse structures, offer a new perspective on discourse linking and therefore contribute towards filling an important research gap.

1.2 Goals of the dissertation and proposed analysis

Focusing on the German indefinite pronoun *ein(er)*, this dissertation has two main goals: First, it seeks to give a full characterization of *ein(er)* as a pronoun, including formal aspects, as well as to capture its many interpretations. The second main goal is to focus on the distinction between the partitive and the elliptic interpretation and to ask how *ein(er)* takes part in discourse linking.

The first main goal, characterizing *ein(er)* as an indefinite pronoun, involves formal aspects as well as semantic and pragmatic properties of *ein(er)* and can be grouped into three subgoals. As explained above, *ein(er)* was chosen as a research object because of

its many interpretations. Therefore, the first of the subgoals is to describe and classify the different interpretations of the pronoun.

Preliminary attempts to classify different interpretations of *ein(er)* (without an in-depth description, however) have already been made by the German grammar *Der Duden* as well as by Zifonun (2007) in her grammar of German in a European comparison. Building on these insights and adding new data and observations, I am going to propose a new classification of six different interpretations of the German indefinite pronoun *ein(er)*. In short, I propose that it can be interpreted as independent, referring to an unspecified human being (similar to pronouns like *someone* or *jemand*, see (4a)), impersonal when expressing a generic or arbitrary meaning (4b), cataphoric where subsequent anaphoric uptake is obligatory (4c), elliptic where the pronoun is anaphoric to an NP in the discourse (4d), partitive, referring to an element of a group or set from the discourse (4e), or lexicalized in fixed constructions (see (4f)).

- (4) a. Gestern hat mich **einer** im Zug angesprochen.
*'Yesterday, I was approached by **someone** on the train.'*
- b. Das Licht blendet **einen**.
*'The light is blinding **(you)**.'*
- c. **Eines** hatte Maria jedoch durchschaut: Peter hatte ein Geheimnis.
*'However, Maria had seen through **one thing**: Peter had a secret.'*
- d. Lisa liest ein Buch und Simon liest auch **eines**.
*'Lisa is reading a book and Simon is reading **one** too.'*
- e. Unser Nachbar hat drei Hunde. **Einer** bellt immer, wenn ich ihn sehe.
*'Our neighbor has three dogs. **One** barks every time I see him.'*
- f. Peter ist draußen um **eine** zu rauchen.
*'Peter is outside having **a smoke**.'*

As a second subgoal, I aim to clarify the structural makeup of the pronoun. Here, I propose that the pronoun *ein(er)* is a determiner followed by a covert noun. I therefore follow assumptions from the literature that argue for an assimilation of pronouns and determiners in general (for example, Postal, 1966; Elbourne, 2005). Among German indefinite pronouns, however, the proposed structural makeup of *ein(er)* does not seem to be the norm, as a lot of pronouns, for example *jemand*, cannot be followed by an overt noun and are therefore very likely not determiners.

The third and last subgoal of task one is to review the literature on the semantics and pragmatics of indefinite pronouns and apply the obtained information to the research object *ein(er)*, focusing on each interpretation individually. The goal is to clarify the status of *ein(er)* among the family of indefinite pronouns. It will show that in grammars and the linguistic literature, the term ‘indefinite pronoun’ is often used for a variety of expressions fulfilling different functions and showing diverging semantic properties. Applying the information on different functions of indefinite pronouns to each interpretation of *ein(er)* separately will furthermore support the assumption that the six interpretations have to be held apart.

The second main goal of this dissertation is to use the pronoun *ein(er)* as an example to investigate the role of indefinite pronouns in discourse. In the linguistic literature, anaphoric interpretations are usually seen as one phenomena without further differentiation. I will however argue, that two interpretations have to be distinguished due to different formal as well as discourse properties. In other word, I will focus on the difference between the elliptic and the partitive function and ask how this distinction is related to discourse structure and linking. Again, I have divided this main goal into three subgoals.

The first subgoal is to give a full description of the different types of discourse linking that occur for the pronoun *ein(er)*. I propose that two interpretations have to be distinguished here: an elliptic interpretation (resulting from NP-ellipsis, see example (5a)) and a partitive one (based on the canonical partitive structure, see (5b)).

- (5) a. Lisa hat einen Hund und Simon hat auch **einen Hund**.
 ‘Lisa has a dog and Simon also has **a dog**.’
- b. Lisa hat drei Hunde. **Einer der Hunde** bellt ständig.
 ‘Lisa has three dogs. **One of the dogs** barks all the time.’

In this dissertation, it will be shown that the elliptic and the partitive interpretation result from two different underlying structures. Furthermore, it will be argued that the elliptic and the partitive interpretation refer to two different levels of linguistic structure. While NP-ellipsis is argued to be a copying process on a textual level, it will be shown that the partitive interpretation refers to the level of the mental discourse model in that it picks out one element of a group or set that has been introduced as a discourse referent. By introducing new referents, both types of discourse linking can furthermore be

differentiated from linking with definite pronouns which establish a coreferential relationship on the level of the mental discourse model.

Second, I will investigate interpretational preferences for anaphoric interpretations and discuss how they relate to principles of discourse coherence. I will look at examples like (6) where the pronoun *einer* is ambiguous between an elliptic, a partitive, and an independent interpretation and ask how readers would interpret the pronoun in such contexts.

- (6) Im Foyer der Oper hat Lisa mit einigen Rentnern gesprochen. Als die Glocke ertönte hat **einer** noch schnell sein Glas Sekt ausgetrunken.
'In the foyer of the opera, Lisa has spoken with some pensioners. When the bell rang, one quickly finished his glass of champagne.'

I present experimental evidence showing a partitive preference when both anaphoric interpretations are available, and that the partitive interpretation is a stronger competitor to an independent interpretation than the elliptic one.

The third subgoal of the investigation on the discourse role of indefinite pronouns is to investigate which parameters influence the interpretation of an ambiguous pronoun *ein(er)*. I will focus on the factor grammatical role and present experimental evidence that proves the importance of this factor. However, I will not only ask if grammatical role influences the interpretation but rather how it does. We will see, that the influence depends on the type of interpretation that is in focus and the experimental evidence therefore supports the important distinction between an elliptic and a partitive interpretation of *ein(er)*. Again, focusing on examples that can be interpreted as either elliptic, partitive, or independent, it is asked whether the syntactic position of the pronoun, its potential antecedent, or the relation between the two influences interpretational preferences of the reader. These types of differences, which will be investigated in two rating studies, are illustrated in examples (7) and (8). The examples in (7) vary the grammatical role for the indefinite pronoun. While in (7a) it occurs in subject position, in (7b) it is the object of the second sentence. Similarly, in (8), the potential antecedent for an anaphoric interpretation either occurs in subject position (in the case of the elliptic interpretation, as part of the subject, see (8a)) or in object position/as part of the object (8b). If both the antecedent and the pronoun appear either in subject or object position, they are furthermore in a parallel grammatical role relation (see (8b)), whereas if the antecedent occurs in subject and the pronoun in object position or vice versa, they appear in non-parallel roles (8a).

- (7) a. Nach der Aufführung in der Oper hat Lisa noch mit einer Gruppe Rentnern gesprochen. Auf dem Weg nach draußen hat **einer** ihr die Tür aufgehalten.
'After the performance at the opera, Lisa talked to a group of pensioners. On the way out, one held (for) her the door open.'
- b. Nach der Aufführung in der Oper hat Lisa noch mit einer Gruppe Rentnern gesprochen. Auf dem Weg nach draußen hat sie **einem** die Tür aufgehalten.
'After the performance at the opera, Lisa talked to a group of pensioners. On her way out, she held (for) one the door open.'
- (8) a. Nach der Aufführung in der Oper hat eine Gruppe Rentner Lisa angesprochen. Auf dem Weg nach draußen hat sie **einem** die Tür aufgehalten.
'After the performance at the opera, a group of pensioners approached Lisa. On the way out, she held (for) one the door open.'
- b. Nach der Aufführung in der Oper hat Lisa eine Gruppe Rentner angesprochen. Auf dem Weg nach draußen hat sie **einem** die Tür aufgehalten.
'After the performance at the opera, Lisa approached a group of pensioners. On the way out, she held (for) one the door open.'

I present two experiments that provide evidence that effects on the elliptic interpretation pattern with assumptions that are made for ellipsis, while in case of the partitive interpretation, results are more likely to pattern with assumptions for definite pronouns. The results thus highlight the distinction of an elliptic and a partitive interpretation of the indefinite pronoun *ein(er)* as well as the importance of investigating different types of pronominal expressions to get a full understanding of reference in discourse.

Altogether, the different goals pursued in this dissertation tackle various perspectives on indefinite pronouns which are seldom discussed together. Focusing on *ein(er)* as a research object allows me to bring together independent as well as anaphoric interpretations and to discuss not only a variety of semantic properties of indefinite pronouns but also their roles in discourse.

1.3 Basic terminology and conventions

Before I provide more details about the structure of this dissertation, I want to be clear with respect to some of the used terminology. Therefore, this section defines some important terms to make clear how I use them in this dissertation and specifies conventions for translating German examples into English.

Pronoun: Pronouns are expressions that can occur in argument position and can be paraphrased with a full DP. While pronouns like personal or demonstrative pronouns can be paraphrased by a definite DP, an indefinite pronoun can be paraphrased by an indefinite DP. As they come with very limited conceptual information, pronouns usually link to other discourse entities. I do not differentiate determiners that are followed by a covert NP from the pronominal class (in fact, it is even argued that the pronoun *ein(er)* falls under this category) but think those are a subclass of the class ‘pronouns’. In fact, this structural makeup may be present in most pronouns, as a lot of the linguistic literature observes an assimilation of pronouns and determiners (for example, Postal, 1966; Vater, 2000; Elbourne, 2005; Grosz & Patel-Grosz, 2016).

Anaphoric: In this dissertation, a broader understanding of the term ‘anaphoric’ is assumed, according to which an expression is anaphoric if it has a relation to a textual antecedent that can be clearly described (Prince, 1981). Therefore, an anaphoric pronoun is understood as a pronominal form that refers to linguistic material that has preceded it in the discourse. The term ‘anaphoric relation’ therefore for example covers phenomena such as different types of ellipsis, destressing, and even non-coreferential definite anaphoric expressions (such as bridging or metonymies). Coreference of antecedent and anaphoric expression is understood as a special case of an anaphoric relation.

How *ein(er)* relates to equivalents in other languages: Indefinite pronouns based on the numeral ‘one’ (as is the case for the German pronoun *ein(er)*) are a frequent phenomenon in the languages of the world (Haspelmath, 1997). However, in this dissertation, when I talk about different interpretations, or semantic or pragmatic properties of the pronoun *ein(er)*, I am only making claims about this particular German expression. Especially in related languages, we find expressions that seem to share many of the properties I talk about, for example the English pronoun *one*. However, *one* as an example shows that those expressions still show enough significant differences. For example, in English, there are different lexemes *one*, with most of the linguistic literature focusing on the noun *one* that replaces NPs (for example, Postal, 1996; Panagiotidis, 2003; Payne et al., 2013), and the lexeme *one* that replaces DPs does not show the same range of interpretations as *ein(er)* (we have already seen above that the independent interpretation of *ein(er)* has to be translated as *someone*). Therefore, in this dissertation, all my assumptions are only made for the German pronoun *ein(er)* if not stated otherwise.

Translation conventions for examples: Keeping these considerations in mind, I set the following conventions for translations of German examples: I will mark occurrences of *ein(er)* in German in bold face, and will match the English translation to the respective interpretation, trying to match the meaning of the pronoun. An independent interpretation will be translated as *someone*, an impersonal one as *you*. I will use *one* for the elliptic and the partitive interpretation and an indefinite noun phrase for the cataphoric (*one thing* or *one person*) and lexicalized interpretation (depending on construction), also marked in bold face. If the pronoun is ambiguous between interpretations, I will use *one*. Translations are meant to represent the German sentences and will therefore be oriented towards the German grammar and word order.

1.4 Structure of the dissertation

The structure of this dissertation follows the research goals I have outlined above. Chapters 2 and 3 characterize *ein(er)* as a pronoun, and Chapters 4, 5, and 6 focus on anaphoric interpretations of *ein(er)* and discuss different types of discourse linking.

Chapter 2 presents my basic assumptions, discussing formal aspects as well as possible interpretations of the German indefinite pronoun *ein(er)*. The chapter provides an overview of the morphological properties of the pronoun and reviews the existing literature on this topic. At its core, it proposes a new classification of six different interpretations of the German indefinite pronoun *ein(er)*: independent, impersonal, cataphoric, elliptic, partitive, and lexicalized. I describe properties of each interpretation and distinguish them based on lexical restrictions and discourse requirements. Then, turning back to formal properties, it is argued that *ein(er)* is actually a determiner followed by a covert NP and that different options for filling the nominal slot are one of the reasons why *ein(er)* shows these many interpretations.

Chapter 3 deals with important aspects of the semantics and pragmatics of indefinite pronouns. It seeks to answer which expressions count as indefinite pronouns, discusses different functions of indefinite pronouns, and asks what their role in discourse is. By applying this information to each interpretation of the pronoun *ein(er)*, it is shown that the proposed six interpretations behave quite differently, both for semantics as well as discourse properties.

In Chapter 4, I propose that two anaphoric interpretations of *ein(er)* (as well as other bare determiners) have to be distinguished: a simple elliptic interpretation that is due to

NP-ellipsis and a partitive interpretation that is actually a covert partitive. I further assume that the elliptic interpretation refers to a textual level while the partitive interpretation refers to elements in the discourse model. To support the analysis, I present data on the anaphoric behavior of the indefinite pronoun *ein(er)* and review the two possibilities for a uniform analysis (the noun phrase ellipsis and the partitive approach). As neither are able to explain all the data, I conclude that this can only be done by the proposed dual approach.

Chapter 5 concentrates on examples where *ein(er)* is ambiguous between three interpretations - independent, partitive, and elliptic - and asks how readers interpret such a pronoun. It is argued that the type of anaphoric interpretation (i.e., elliptic or partitive) matters when it comes to interpretational preferences. The claim is supported by a review of the literature on the interpretation and processing of anaphoric quantifiers and experimental evidence from a rating study.

Chapter 6 further investigates the interpretation of an ambiguous pronoun *ein(er)* using the same experimental method as in Chapter 5 but focusing on the influence of the factor grammatical role. I present data from two experiments, the first focusing on the elliptic, the second focusing on the partitive interpretation. The results of the experiments show that effects on the elliptic interpretation follow assumptions that are made for ellipsis (such as an effect of locality and parallelism), while in the case of the partitive interpretation the results follow more assumptions for definite pronouns (I discuss the effects of prominence and the relation to information structure).

Finally, in Chapter 7, I summarize the general conclusions to be drawn from the research presented in this dissertation.

2 Properties of the German indefinite pronoun *ein(er)*

2.1 Introduction

The German language features a number of indefinite pronouns such as, for example, *jemand* ('someone'), *etwas* ('something'), and *irgendwo* ('anywhere'), but also the indefinite pronoun *ein(er)*, which is the topic of this dissertation. Like other indefinite pronouns, *ein(er)* can be paraphrased by as well as occur in the same sentence position as full indefinite DPs and refers to a not clearly specified referent.

For indefinite pronouns, the type of entity (for example thing, person, or place) they refer to is usually conventionalized. For example, the German indefinite pronoun *jemand* always refers to a human or person. *Ein(er)*, however, shows an interesting behavior in this respect. In some contexts, the pronoun refers to an indefinite human referent and thus behaves very similarly to *jemand*. Example (9) shows that the use of both, *ein(er)* and *jemand*, results in a very similar meaning of the sentence. In other contexts, however, the meaning of *ein(er)* is not restricted to persons, but rather depends on contextual information. So, in (10) *ein(er)* is understood to refer to a fork, while such an interpretation is not possible with *jemand*.

- (9) a. Gestern hat mich **einer** im Zug angesprochen.
b. Gestern hat mich **jemand** im Zug angesprochen.
'Yesterday, **someone** spoke to me on the train.'
- (10) a. Ich habe keine Gabel. Kannst du mir **eine** geben?
b. Ich habe keine Gabel. *Kannst du mir **jemand** geben?
'I don't have a fork. Can you give me **one**?'

Among German indefinite pronouns, the pronoun *ein(er)* thus seems to have a special status. It is characterized by its multiple interpretations, with the meaning of some interpretations being conventionalized and that of others depending on contextual information. Nonetheless, so far, the pronoun *ein(er)* has received only limited attention in the literature, especially when it comes to classifying and comparing the semantics and pragmatics of its different interpretations (see, however, Zifonun, 2007). The goal of this chapter is to investigate and describe different interpretations of *ein(er)*. I will furthermore argue that, unlike some other German indefinite pronouns, *ein(er)* is actually a determiner

followed by a covert NP, and show how this underlying structure can account for the discussed variety of interpretations.

In the remainder of this chapter, I will first describe formal properties of the pronoun *ein(er)* and use those to limit the scope of the investigation. Focusing on the underlying structure of the pronoun, I will argue that *ein(er)* is a determiner followed by a covert noun phrase. Then, based on the semantic restrictions of each interpretation and their requirements regarding discourse context, I will propose a classification of six different interpretations and describe their distinguishing properties. Section 2.4 will combine my assumptions and show how the analysis of *ein(er)* as a determiner can account for the different interpretations of the pronoun. The chapter will end with a short summary.

2.2 Formal properties of the indefinite pronoun *ein(er)*

2.2.1 Inflection, stem and variation

Inflectional paradigm

The indefinite pronoun *ein(er)* consists of the stem *ein-* and a nominal inflectional affix, that inflects for gender as well as case, similar to demonstrative or possessive pronouns, according to the pattern of German pronominal inflection (Eisenberg, 2013; Duden, 2016), which is illustrated in Table 1².

	Masc	Fem	Neut
Nom	einer	eine	eines
Acc	einen	eine	eines
Dat	einem	einer	einem
Gen³	eines	einer	eines

Table 1: Inflectional paradigm of the indefinite pronoun *ein(er)*.

Ein(er) is limited to singular contexts (see (11a)); in plural contexts the form *welch(er)* has to be used to express similar content (11b). Furthermore, *welch(er)* has to be used to refer to mass nouns (see (11c)) as the use of the form *ein(er)* is restricted to count nouns.

² In this dissertation I will use the following abbreviations concerning gender and case: masc for masculine, fem for feminine, neut for neutrum as well as nom for nominative, acc for accusative, dat for dative and gen for genitive. If relevant, I will use these abbreviations also as markers in my examples.

³ The use of the genitive form of an unmodified pronoun *ein(er)* as a sentence complement or genitive attribute is not possible in German. The form can however be used if it is extended with a partitive genitive as in *Wir erwarten den Besuch eines Ihrer Herren.* ('We expect the visit of one of your gentlemen.' Zifonun, 2000: 232; Duden, 2016: 315).

In a negative sentence, where the indefinite pronoun is under the scope of negation, the pronoun *kein(er)* is used, as illustrated in (11d), which then expresses sentence negation. The form *kein(er)* is not restricted to singular count nouns in the same way *ein(er)* is. It can be used with mass or count nouns as well as in the singular or plural form.

- (11) a. Kann mir **einer** helfen das Sofa zu verschieben?
 ‘Can **someone** help me move the sofa’
- b. Können mir **welche** helfen das Sofa zu verschieben?
 ‘Can **some people** help me move the sofa’
- c. Ich habe kein Geld dabei. Kannst du mir **welches** geben?
 ‘I don’t have any money with me. Can you give me **some**?’
- d. Kann mir denn **keiner** helfen das Sofa zu verschieben?
 ‘Can **nobody** help me move the sofa?’

The word stem *ein-* in German

The word stem *ein-* in German can not only be used as a pronoun, but is also part of a number of different word types. One of them is the German indefinite article. Diachronically, both the indefinite article and the pronoun *ein(er)* developed from the German version of the numeral ‘one’ (e.g., Givón, 1981; Lehmann, 2015; Szczepaniak, 2016). At PF, however, while the indefinite article is followed by a (potentially modified) noun, the pronoun *ein(er)* forms a sentence argument on its own. Furthermore, the inflection of the indefinite article differs from the indefinite pronoun. Table 2 shows the inflectional paradigm of the indefinite article in German. While for the article, the nominative masculine, nominative neuter, and accusative neuter forms do not receive an inflectional affix, they do for the indefinite pronoun (as shown in Table 1). This is further illustrated in the contrast between (12a) and (12b).

	Masc	Fem	Neut
Nom	ein	eine	ein
Acc	einen	eine	ein
Dat	einem	einer	einem
Gen	eines	einer	eines

Table 2: Inflectional paradigm of the indefinite article in German.

- (12) a. Im Klassenraum stehen **20 Stühle**. **Ein Stuhl** ist kaputt.
 b. Im Klassenraum stehen **20 Stühle**. **Einer** ist kaputt.
 ‘*There are 20 chairs in the classroom. A chair / one is broken.*’

In this dissertation, I will subsume under the term ‘indefinite pronoun *ein(er)*’ all instances of the form *ein-* plus inflection that form a constituent of size DP. Like personal or demonstrative pronouns, which replace definite full DPs, the pronoun *ein(er)* can replace full indefinite DPs in a sentence. Thus, *ein(er)* behaves quite differently from English *one*, which is argued to be a real ‘pro-noun’ in that it often replaces an NP, as shown in example (13) where *one* only replaces the noun *hat* (see also Postal, 1969; Dechaine & Wiltschko, 2002; Falco & Zamparelli, 2016).

- (13) a. Peter bought a blue hat and Paul bought a red hat.
 b. Peter bought a blue hat and Paul bought a red one.

The stem *ein-* can also be found as an adjective in the expression *die einen* (roughly: ‘people on one side’), which, however, then has to be followed by *die anderen* (‘people on the other side’) and is preceded by the definite article. Unlike the pronoun *ein(er)*, the adjectival form comes either in the singular or the plural (*der eine – die einen*) and shows weak adjectival inflection in the singular. The stem *ein-* is furthermore found in the verb *einen* (‘to unite’), which can be distinguished by syntactic position as well as verbal morphology. These forms will not be part of the discussion in this dissertation.

The stem of the indefinite pronoun *ein(er)* is furthermore identical to the stem of the numeral *eins*, ‘one’. However, while numeral and article can be distinguished through phonetic emphasis (Eisenberg, 2013: 159f.) – in spoken language, the indefinite article can be reduced, but the numeral cannot – the distinction between numeral and indefinite pronoun is not as clear, as the indefinite pronoun cannot be phonetically reduced due to its argument status. However, the numeral can follow a determiner in expressions like *das eine Auge* (‘the one eye’) or *sein eines Auge* (‘his one eye’). Furthermore, sometimes context can help us to distinguish numeral and indefinite article or pronoun. While we can clearly identify the numeral in opposition to other numerals (14a), we find the indefinite pronoun in existential contexts and in opposition to *kein(er)* (see (14b), examples modified from Eisenberg, 2013: 160).

- (14) a. Das sind **zwei** Schachteln, ich wollte aber eigentlich **eine**.
 ‘Those are **two** boxes, but I actually wanted only **one**.’
- b. Das ist **keine** Schachtel, ich brauche aber **eine**.
 ‘This is **no** box, but I need **one**.’

Variation in German dialects

Formal peculiarities of the indefinite pronoun *ein(er)* which differ from the described properties in standard German have received quite a bit of attention in the linguistic literature on dialectal variation in German. This research, which concentrates on the extension of the use of the form *ein(er)* in Bavarian to plural and mass nouns (Plank, 1994; Glaser, 1996) as well as the distribution of different dialectal forms for the partitive interpretation as a linguistic area-forming variable (‘raumbildende Variable’, Glaser, 1995: 68) in the realm of German dialects (Glaser, 1995, 2008; Strobel, 2017), highlights the importance of an in-depth investigation of the pronoun *ein(er)* as well as the benefits of linking formal and functional properties, a perspective which is also taken in this dissertation. I will therefore briefly review the dialectal research on the indefinite pronoun *ein(er)*.

Bavarian differs from Standard German in that it lacks the interrogative-based indefinite pronoun *welch(er)*, which serves as the plural replacement of *ein(er)*. Bavarian instead pluralizes the Bavarian version of *ein(er)* (*oan*) itself, as example (15) shows (Plank, 1994: 11f).⁴ Furthermore, the Bavarian plural form of *ein(er)* can also be used to refer back to mass nouns (Glaser, 1993, 1996; Plank, 1994). Thus, morphologically, Bavarian does not distinguish between mass and count nouns (Glaser, 1993).

- (15) a. Fo Schdraubing is aa **oana** kema.
 ‘From Straubing, **someone** came as well.’
- b. Fo Schdraubing han aa **oa** kema.
 ‘From Straubing, **some people** came as well.’

The extension of the use of *ein(er)* in Bavarian is especially interesting for diachronic considerations, as the use of the indefinite pronoun and the indefinite determiner *ein(er)* for anaphoric reference to indefinite plural and mass nouns is an extension of the function

⁴ However, Glaser argues that the plural paradigm of the pronoun in Bavarian is not fully clear. She argues that a uniform plural form has to be assumed, although it shows phonetic variants (Glaser, 1996: 155).

of the indefinite article and therefore historically an innovation (Glaser, 2008). Also, in light of the fact that the indefinite pronoun developed from the numeral *one*, the inflectional versatility has increased with respect to number, whereas grammaticalization usually involves degeneration of semantic information (Plank, 1994).

Ein(er) and related forms are also a subject of dialectal research on the morpho-syntactic variation of so-called partitive-anaphoric pronouns, which refer back to a qualitatively determined set in a quantitatively undetermined way (Glaser, 1993, 2008; Strobel, 2017). While in standard German, the pronoun *welch(er)* is used in such contexts (see (16)), in German dialects, this uptake can be expressed using different morphological forms.

- (16) Da liegen einige Äpfel. Gibst du mir **welche**?
*‘There are some apples. Can you give me **some**’*

Next to *welch(er)* or the related form *we(l)k(er)*, which is used in Low German dialects, the following three strategies can be found in German dialects (Glaser, 1993, 2008; Strobel, 2017): partitive anaphors, which go back to old genitive forms in central German and peripheral southern dialects; zero-anaphora in the Alemannic dialect; and the generalized indefinite pronoun *ein(er)* in Bavarian, which has already been discussed above. This dialectal variation is one of the examples that Glaser (2008) uses to show that the dialectal landscape of German in relation to syntactic variation is structured in linguistic areas and that this structuring can be of quite different forms (see also Strobel, 2017). It shows that syntactic isoglosses between the different discussed strategies do not always fall together with already established phonological isoglosses such as the famous ‘Benrather Linie’, a dividing line between High and Low German (Strobel, 2017: 58). The use of the anaphoric-partitive pronoun is therefore used as an example to show that morpho-syntactic variation is an important yet understudied variable for describing the German dialectal landscape.

However, what seems to be missing from these studies is a more critical investigation of the function of the pronoun. For example, Glaser and Strobel investigate so-called partitive-anaphoric pronouns without clearly distinguishing this function from other functions of the pronoun. Section 2.3 will show, however, that for the indefinite pronoun *ein(er)*, an anaphoric interpretation is not automatically partitive.

2.2.2 The pronoun *ein(er)* as a determiner

As we have seen in section 2.2.1, the indefinite pronoun *ein(er)* and the German indefinite article share the same stem as well as, with some exceptions, the same inflectional paradigm. I assume that this is not accidental, but that we deal with the same lexeme, which is followed by an overt noun in the case of the indefinite article and by a covert noun in the case of the pronoun. Although I base my analysis on the work of Elbourne (2005), it should be noted that the assumption that pronouns should be analyzed as a determiner or definite description is not unique to Elbourne's work but can be found in many other linguistic studies as well (see, for example, Postal, 1969; Cardinaletti, 1994; Déchaine & Wiltschko, 2002; Panagiotidis, 2002; for German see, for example, Vater, 2000; Zifonun, 2005). In the following, I will briefly outline this approach, discuss how it can be applied to the indefinite pronoun *ein(er)* and mention the advantages and challenges of such an approach.

In his work from 2005, Elbourne proposes that all types of expressions referring to individuals (i.e., pronouns, proper names, and definite descriptions) share a common underlying structure: an article or determiner, an index that accounts for discourse linking or variable binding of definite expressions, and an NP predicate. The proposed structure is illustrated in (17a) and exemplified for a definite description in (17b).

- (17) a. Det_i NP
 b. The_i car

While Elbourne's analysis is most straightforward for definite descriptions, he expands it to pronouns as well, arguing that pronouns are actually determiners with the denotation of a third personal pronoun corresponding to the denotation of the definite article (abstracting away from ϕ -features, see also Postal, 1969). They are indexed and followed by a nominal that is, however, dropped at PF. Elbourne therefore assumes a structure like (18) for personal pronouns.

- (18) she_i NP

In this study, I will follow Elbourne and assume a similar structure for the German indefinite pronoun *ein(er)*. Accordingly, I assume for the pronominal *ein(er)* and the German indefinite article that we deal with the same determiner that is followed by a nominal slot.

While the nominal is overtly expressed in the case of the indefinite article (19a), it can also be deleted at PF (see (19b)). The latter is what I have called the pronominal *ein(er)*, a determiner followed by a covert NP.⁵ As the index in Elbourne's original structure is triggered by definiteness, it is not present for the indefinite determiner *ein(er)*.

- (19) a. *article*: *ein(er)* NP
 b. *pronoun*: *ein(er)* ~~NP~~

The assumed structure fits nicely in syntactic assumptions of the DP hypothesis. Following Abney (1987), I assume that indefinite noun phrases (just like definite noun phrases) are not headed by the noun but by the determiner (for German see, for example, Haider, 1988; Demske, 2011). For an indefinite noun phrase that consists of an article and a noun, like, for example, *ein Auto* ('a car'), I will therefore assume the structure illustrated in (20).

- (20) [DP *ein* [NP *Auto*]]⁶

For the indefinite pronoun, I assume the same structure but with a silent noun that is present in the structure but not expressed overtly. Thus, I assume a structure like (21) for a pronoun *eines* referring to a car.

- (21) [DP *eines* [NP ~~*Auto*~~]]

Analyzing *ein(er)* as a determiner heading the phrase followed by a covert nominal helps to explain the matching morphological pattern of pronoun and indefinite article in German, and, as we will see below, it can account for the richness of interpretational possibilities that makes the pronoun *ein(er)* special. Apart from that, it is supported by arguments that have been made in the literature for a complex structure of pronouns in general (see, for example, Postal, 1969; Déchaine & Wiltschko, 2002; Sauerland, 2007; Patel-Grosz & Grosz, 2017), most of which hold true for *ein(er)* as well, as shown below.

⁵ The assimilation of indefinite pronouns and indefinite articles is also what Elbourne argues for English, regarding which he notices that even though NP-deletion is not possible after the indefinite article *a/an*, it is possible after *one*, a phonological variant of the same lexical item (Perlmutter, 1970; Stockwell, Schachter, & Partee, 1973).

⁶ It is possible to assume for example an additional numeral projection for the indefinite determiner. This is not in conflict with the proposed structure. However, as it does not seem beneficial for my purposes, I assume the simplest structure necessary with determiner and noun phrase.

For example, Sauerland (2007) argues that gender marking of pronouns in German has to be attributed to a silent nominal in the structure. In German, we see a morphological contrast also for inanimate objects; example (22) shows that the nouns *Löffel*, *Gabel*, and *Messer* ('spoon', 'fork' and 'knife') have different lexical genders, which forces agreement on noun phrase as well as on anaphoric pronouns.

- (22) der Löffel_{masc}, die Gabel_{fem}, das Messer_{neut}
 'the spoon, the fork, the knife'

Agreement is also forced for deictic pronouns which do not have a linguistic antecedent that can account for this observation. This is shown in (23). If the sentence is uttered by speaker A standing in front of a set of cutlery, the pronoun *sie* (*it_{fem}*) in this situation can only refer to the fork as this is the only item which the linguistic description matches in gender. As in German, the gender of a noun phrase is determined by the lexical noun, the distribution of grammatical gender on pronouns must refer to a noun. The most direct analysis, which also accounts for deictic uses of pronouns, is to assume that the pronoun contains a silent noun. Then the same mechanism that transfers the gender of the noun to the entire noun phrase can apply for pronouns as well (Sauerland, 2007).

- (23) A is standing in front of a single set of cutlery
 A: Sie (=die Gabel) ist aus Gold.
 'A: It_{fem} (=the fork) is made out of gold.'

Sauerland's argument also translates to the use of *ein(er)* as a pronoun. As we see in (24), grammatical gender is also morphologically marked on the indefinite pronoun. This can be explained if we assume a silent nominal in the structure parallel to the noun phrases in the first sentence.

- (24) a. Tim hat zwei Löffel_{masc} gestohlen. **Einer**_{masc} war aus Gold.
 'Tim stole two spoons. One was made out of gold.'
 b. Tim hat zwei Gabeln_{fem} gestohlen. **Eine**_{fem} war aus Gold.
 'Tim stole two forks. One was made out of gold.'

There is also evidence in the work of Brandt and Fuß that the German pronoun *ein(er)* is followed by a covert nominal. In their study, Brandt and Fuß (2014) look at the distribution of the w-relativizer *was* and the d-relativizer *das* in German relative clauses and argue that the d-relativizer is licensed by syntactic agreement with the nominal head of the

relative clause, and is therefore infelicitous if there is no nominal antecedent. This is shown in example (25). While (25a) allows for both relativizers, *was* and *das*, (25b), where *alles* does not provide a nominal antecedent, only allows the relativizer *was*.

- (25) a. Jedes Buch, was / das ich gelesen habe, steht in meinem Regal.
 ‘Every book that I have read is on my shelf.’
- b. Alles, was / *das ich gelesen habe, steht in meinem Regal.
 ‘Everything that I have read is on my shelf.’

Based on a corpus study, Brandt and Fuß conclude for the pronoun *ein(er)* that they find too many relative clauses headed by *das* to be nounless. The pronoun thus patterns with (25a) rather than (25b), which points toward an analysis along the lines suggested in this chapter. This data is furthermore supported by the examples in (26), which show that *ein(er)* allows for relative clauses with *das*.

- (26) a. Da ist **eines**, das mich stört: Das Fenster ist undicht.
 ‘There is **one thing** that bothers me: the window is leaking.’
- b. Ich mag Bücher und **eines**, das ich schon immer lesen wollte, ist Moby Dick von Herman Melville.
 ‘I like books and **one** I have always wanted to read is Moby Dick by Herman Melville.’

One observation that might be an argument against the proposed analysis of *ein(er)* as a determiner followed by a covert noun is that there are cases where the inflectional paradigm of the pronoun and article differ. If we assume that we deal with the same determiner that is followed by an overt noun in the case of the article and a covert one in the case of the pronoun, then why can we use the form *ein* only for the article and the form *einer* for male nouns in the nominative and *eines* for neutral nouns in the nominative and accusative only for the pronoun, as (27) shows?

- (27) a. Sam kauft ein Auto und Jim kauft auch ***ein**.
- b. Sam kauft ***eines** Auto und Jim kauft auch **eines**.
 ‘Sam buys a car and Jim buys **one**, too.’

This challenge has, however, already been addressed in the literature and can be solved if we follow the account by Murphy (2018) who argues that the special inflection we find for the pronominal form is actually displaced adjectival inflection. In short, following

Saab and Lipták (2016), Murphy argues that the difference in inflection is a direct result of ellipsis interacting with two postsyntactic operations: Lowering and Local Dislocation (see also Embick & Noyer, 2007). In the following, I will shortly present this approach, for more details, however, see Murphy (2018).

For the analysis, Murphy assumes a more articulated structure of the DP than was described above, positing a categorizing head *n* that combines with the lexical root as well as an intermediate projection φ P which is responsible for adjectival inflection in that it hosts features for person, number and gender (Murphy, 2018: 342). Given those assumptions, for non-elliptical noun phrases, Murphy assumes a structure as illustrated in (28). As (28a) shows, adjectival inflection originates on the φ head, and then, as shown in (28b), the inflectional affix attaches onto the adjective via Lowering which is defined as a movement where a head is lowered to the head of its complement (Murphy, 2018: 344).

(28) a. [DP ein [φ P [φ -es] [n P groß- [n P *n* Haus]]]]

b. [DP ein [φ P [φ] [n P groß-es [n P *n* Haus]]]]

Furthermore, for noun phrases without an adjective, Murphy assumes that the Lowering of φ to the *n* head results in a standard null Spell-Out of *n* (Murphy, 2018:345) which furthermore means that adjectival inflection is not visible on the surface structure (see (29)).

(29) [DP ein [φ P [φ] [n P *n* Haus]]]]

Then, following Saab and Lipták (2016), Murphy argues that ellipsis of the *n*P bleeds Lowering of φ to *n* which results in a stranded affix (see (30a)) As Lowering cannot apply, the now stranded affix then reattaches on a non-canonical adjacent host (i.e., the determiner) via a second movement operation that occurs after linearization and operates in terms of linear order which is called Local Dislocation (Murphy, 2018:344). This movement is illustrated in (30b).

(30) a. [DP ein [φ P [φ -es] [n P ~~*n* Haus~~]]]]

b. [DP ein-es [φ P [φ] [n P ~~*n* Haus~~]]]]

The inflectional ending of the pronoun *ein(er)* for masculine, nominative as well as neuter nominative and accusative (i.e., the cases where the form differs from the indefinite

article) is thus actually adjectival inflection that, due to a blocking mechanism triggered by nominal deletion, get attached to the determiner. The account of Murphy can thus explain the differences in the inflectional paradigm of the German indefinite article and the pronoun *ein(er)* while keeping the basic assumption that we deal with the same determiner.

To sum up, in German, *ein-* forms a full DP either with an overt NP or with a covert NP; the latter is what I call the pronominal *ein(er)*, which is the subject of this dissertation.

2.3 The six interpretations of the indefinite pronoun *ein(er)*

2.3.2 Six interpretations of *ein(er)* – A description

The next section covers the core proposal of this chapter. I will present a new and useful classification of interpretations of the German indefinite pronoun *ein(er)* which is based on semantic as well as discourse properties. I will first give an overview of the proposed classification of interpretations - independent, impersonal, elliptic, partitive, lexicalized, and cataphoric - (for alternative classifications see Zifonun, 2007; Duden, 2016, as discussed below), describe each interpretation and mention their core properties. A more precise differentiation of the individual interpretations based on semantic restrictions as well as discourse requirements follows in the next section.

Independent interpretation

In the independent interpretation, *ein(er)* always refers to an unspecified human entity (see (31)). It usually introduces a new referent into the discourse that can be picked up for future reference.

- (31) Gestern hat mich **einer** im Zug angesprochen.
 'Yesterday, *someone* spoke to me on the train.'

The independent interpretation represents the most stereotypical use as an indefinite pronoun as its meaning matches indefinite pronouns such as English *someone* or the German indefinite pronoun *jemand*. In fact, in German, both *jemand* and the independent interpretation of *ein(er)* refer to an unspecified human entity and can thus be exchanged in most contexts without changing the meaning of the sentence (but see the discussion in 3.4.1) as shown in the modified example (32).

- (32) Gestern hat mich **einer** / **jemand** im Zug angesprochen.
 ‘Yesterday, **someone** spoke to me on the train.’

Unlike the German pronoun *jemand*, *ein(er)* has to be inflected for gender. In German, the pronoun is therefore least restricted in the masculine (i.e., *einer*), which is often viewed as the generic form (for more information and critical aspects, see for example Irmen & Steiger, 2005; Diewald, 2018). However, in some contexts, the independent interpretation is also possible for the feminine form *eine*, at least if the context strongly suggests a female interpretation, for example if the sentence in (33) is uttered by a person who is known to be looking for a female partner.

- (33) In der Bar habe ich am Wochenende **eine** kennengelernt.
 ‘I met **someone**_{female} in the bar this weekend.’

That reference with the independent interpretation of *ein(er)* is restricted to humans can be tested in contexts such as (34). Here, the sentence strongly suggests a non-human interpretation, as this would be pragmatically most plausible. However, example (34) can only be interpreted as there being a non-identified human neighing in the riding school, instead of *einer* referring to one of the horses, which would be the pragmatically more plausible interpretation.

- (34) In der Reitschule wieherte **einer**.
 ‘In the riding school, **someone** neighed.’

Impersonal interpretation

Ein(er) can be interpreted as an impersonal pronoun. Impersonal pronouns, like the English impersonal pronoun *one*, express a generic or arbitrary meaning with a human, mostly non-referential interpretation. German has a dedicated impersonal pronoun: the pronoun *man*, which is illustrated in (35).

- (35) **Man** muss auf den Schalter drücken, damit das Licht angeht.
 ‘**You / One** has to press the switch to turn on the light.’

However, similar to the English impersonal *one*, the pronoun *man* can only be used in the nominative case. To express the same impersonal meaning in the accusative or dative case, one has to use the indefinite pronoun *ein(er)* (see (36)). The impersonal interpretation of *ein(er)* is therefore restricted to the accusative and dative cases. If the pronoun is

used in the nominative case, as in (37), it receives an independent interpretation as described above and cannot express the same impersonal flavor.

- (36) Das Licht blendet **einen**.
 ‘The light dazzles **you**.’
- (37) **Einer** drückt auf den Schalter, damit das Licht angeht.
 ‘**Someone** presses the switch to turn on the light.’

When it comes to the topic of impersonal pronouns or impersonal constructions in general, there is a vast body of literature on this topic in different languages (e.g., Koenig & Mauner, 1999; D’Alessandro & Alexiadou, 2002; Cabredo-Hofherr, 2003, 2010; Siewierska, 2008, 2011; Malamud, 2013; Fenger, 2018; especially for the German pronoun *man* and its suppletive form *ein(er)* see for example Kratzer, 1997; Zifonun, 2000; Cabredo-Hofherr, 2010; Malamud, 2013; Zobel, 2017). For German, however, except for some work by Zifonun (2000), the relationship between *man* and its suppletive form *ein(er)* has not received much attention. In general, assumptions made about the semantics of *man* hold true for the impersonal interpretation of *ein(er)* as well.

Impersonal pronouns are antecedentless and demote their agent or have a generic reading. They thus behave quite differently from ‘normal’ indefinite pronouns, not only in their meaning but also for other formal properties, as the German impersonal pronoun *man* (with its suppletive form *ein(er)*) shows. It is argued that there are mainly three properties that distinguish the impersonal pronoun *man* from other indefinite pronouns in German: restricted modification, discourse properties, and scope behavior. In the following, I will briefly illustrate these properties.

Unlike other indefinite pronouns such as German *jemand* (see (38a)), *man* cannot be modified with an adjective or prepositional phrase, as shown in (38b). The only exception to this rule seems to be the lexicalized phrase *man selbst* (Zifonun, 2000). The same seems to hold true for the impersonal interpretation of *ein(er)*. In example (39) below, *einen* can thus only be understood as independent but not impersonal.

- (38) a. jemand Großes, jemand aus Köln
 ‘someone big, someone from Cologne’
- b. #man Großes, #man aus Köln
 ‘you / one big, you / one from Cologne’
- (39) Das ärgert **einen** aus Köln.
 ‘This annoys **someone** from Cologne.’

Second, impersonals differ from indefinite and definite pronouns in their discourse behavior. They can be used discourse-initially (like indefinite pronouns), but cannot be picked up anaphorically by a personal pronoun. Instead, *man* or *ein(er)* has to be repeated for anaphoric uptake (Zifonun, 2000; Zobel, 2017), as examples (40) and (41) show.

- (40) a. #Wenn **man**_i anruft, erteilt **ihm**_i der Kundenservice eine Auskunft.
 b. Wenn **man**_i anruft, erteilt **einem**_i der Kundenservice eine Auskunft.
 ‘When **you**_i call, the customer service will give #**him**_i /**you**_i information.’
- (41) a. #Das ärgert **einen**_i und **er**_i bemüht sich nicht mehr.
 b. Das ärgert **einen**_i und **man**_i bemüht sich nicht mehr.
 ‘This annoys **you**_i, and #**him**_i / **you**_i stop trying.’

Man always takes narrow scope, irrespective of position, a third property which distinguishes it from other indefinite pronouns (Zifonun, 2000). In example (42) with an adverbial phrase below, we only get one reading for (42a) and (42b): it often happened that there was someone (impersonal) who told me something. The same holds true for negation: *man* always receives narrow focus. The example in (43) on the other hand shows two different meanings. The example (43a) can be similarly paraphrased as ‘it often happened that there was someone who told me something’, while the sentence (43b) means there is someone and this someone often told me something. The indefinite pronoun *jemand* therefore, unlike *man*, shows scopal interaction. The suppletive form *ein(er)* shows the same scopal properties as the impersonal pronoun *man*, but wide scope readings are possible for the independent interpretation and the contrast is therefore a bit harder to show.

- (42) a. Schon oft hat **man** mir gesagt, dass ...
 b. **Man** hat mir schon oft gesagt, dass ...
 ‘Often, **you** / **one** told me that...’
- (43) a. Schon oft hat **jemand** mir gesagt, dass ...
 b. **Jemand** hat mir schon oft gesagt, dass ...
 ‘Often, **someone** told me that...’

Elliptic interpretation

While in the independent and impersonal interpretations of *ein(er)*, reference is restricted to human beings, other interpretations of the pronoun are less restricted. An example of this is the elliptic interpretation which is illustrated in (44). Here, *eines* refers to a book, as it is anaphoric to the noun phrase *Buch* ('book') that is introduced in the previous clause. In the elliptic reading, the interpretation of the pronoun *ein(er)* therefore depends on the context but – as all interpretations of *ein(er)* do – it introduces a new discourse referent.

- (44) Lisa liest ein Buch und Simon liest auch **eines**.
 'Lisa is reading a book and Simon is reading **one**, too.'

The elliptic interpretation of the pronoun is an instance of noun phrase ellipsis⁷. Noun phrase ellipsis, as already discussed by Jackendoff (1971) and Perlmutter (1970) (under the term N-ellipsis), describes the phenomenon that noun phrases which are already present in the discourse can be deleted from the phonological form, leaving only the determiner.

The German pronominal form *ein(er)* has become an important case study in the discussion on ellipsis licensing (for an overview, see Saab, 2019). Ellipsis licensing describes the phenomenon that even when the elided noun is perfectly recoverable, ellipsis is not always well formed. For example, in English, noun phrase ellipsis is possible after a possessive phrase, as shown in (45a) but not after an adjective, as (45b) shows. To form a felicitous sentence, the pronoun *one* has to be inserted after the adjective. In German, however noun phrase ellipsis seems to be much freer than in English. For example, German allows noun phrase ellipsis after adjectives, see (45c, translation of (45b)).

- (45) a. Anna likes Sandra's dress and she likes **Jill's** as well.
 b. Anna likes Sandra's blue dress and she likes **Jill's red** * / **one** as well.
 c. Anna mag Sandras blaues Kleid und sie mag auch **Jills rotes**.

Licensing of noun phrase ellipsis in German seems to be tied to inflection (Lobeck, 1995; Kester, 1996), as it is only allowed if the preceding word bears an inflectional ending. This can be illustrated using adjectives like *rosa* ('pink'), which can be used either with

⁷ In accordance with the formal criteria formulated in section 2.2, I count noun phrase ellipsis after an indefinite article in German as a pronominal form, as *ein(er)* in this case can replace a full DP and is furthermore inflected according to the pronominal paradigm.

or without an inflectional suffix (46a). However, if the noun is elided, the inflected form has to be used (46b), otherwise noun phrase ellipsis is not possible.

- (46) a. Jan trägt ein blaues T-Shirt und Peter ein **rosa / rosanes T-Shirt**.
 b. Jan trägt ein blaues T-Shirt und Peter ein ***rosa / rosanes**.
 ‘*Jan wears a blue t-shirt and Peter a pink (t-shirt).*’

Another argument, often made in the literature, is that licensing of noun phrase ellipsis in German is tied to inflection stems from ellipsis after the indefinite article. As discussed above, the indefinite article in German lacks agreement features in the nominative masculine as well as the nominative and accusative neutral cases (see (47a)). Lobeck (1995) argues that because *ein* without the inflectional affix lacks agreement features, ellipsis fails and is ungrammatical, as (47b) illustrates. However, after the fully inflected pronominal form (see (47c)), ellipsis becomes possible.

- (47) a. Jan trägt ein T-Shirt und Peter trägt auch **ein T-Shirt**.
 b. ***Jan trägt ein T-Shirt und Peter trägt auch ein**.
 c. Jan trägt ein T-Shirt und Peter trägt auch **eines**.
 ‘*Jan wears a t-shirt and Peter wears a / one (t-shirt), too.*’

Partitive interpretation

In the partitive interpretation, the German indefinite pronoun *ein(er)* picks out an element from a group or set that is already introduced in the discourse. An example can be seen in (48) where *einer* refers to one out of the three dogs introduced in the first sentence.

- (48) Unser Nachbar hat drei Hunde. **Einer** bellt immer laut, wenn ich ihn sehe.
 ‘*Our neighbor has three dogs. One always barks loudly when I see it.*’

The partitive interpretation of *ein(er)* is therefore also context-dependent, with its interpretation not being restricted to humans but being restricted by elements in the discourse context. However, unlike in the elliptic interpretation, in the partitive interpretation *ein(er)* is also referentially linked to the discourse by a subset relation. Its referent is entailed to exist in the common ground even though it has not been mentioned explicitly, in other words, it is weakly familiar (Roberts, 2003). A more detailed discussion of the differences between the partitive and elliptic interpretations of *ein(er)* can be found below, and these interpretations will also be discussed in more detail in Chapter 4. As a

second option, the partitive interpretation of *ein(er)* can also refer to a set that is evoked deictically. Thus, I can utter only the second sentence of (48) while pointing at the three dogs my neighbor owns without changing the interpretation of *Einer*.

In general, partitive constructions such as *one of the dogs* or *many of my neighbors* have been the subject of an extensive amount of linguistic research focusing on, among other things, the question of whether there is a second (silent) noun in the structure, constraints on the second inner DP, and the status of the partitive preposition *of* (for example, Reed, 1991; Abbott, 1996; Hoeksema, 1996; de Hoop, 1997, 2003; Barker, 1998; Ionin et al., 2006; Falco & Zamparelli, 2018, 2019. For a more recent overview see, for example, Keizer, 2017). Some of these issues will also be addressed in more detail in Chapter 4.

Lexicalized interpretation

The German indefinite pronoun *ein(er)* appears in a number of lexicalized constructions, such as *eine rauchen* ('smoke a cigarette', see (49)) or *einen trinken gehen* ('go for a drink', see (50)). In those constructions, the interpretation of the pronoun again depends on the linguistic context, however, there is no explicit noun phrase or discourse referent available that is referred to. Instead, the interpretation of the particular construction is specified in the lexicon.

(49) Peter ist draußen um **eine** zu rauchen.

*'Peter is outside to smoke **one** (= a cigarette).'*

(50) Peter und Maria wollen heute **einen** trinken gehen.

*'Peter and Maria want to go drinking **one** (= a drink?) tonight.'*

While the interpretation of the whole lexicalized construction is specified in the lexicon, it is not always clear which interpretation the pronoun *ein(er)* itself receives in each of these cases. While in (49) it is clear that *eine* refers to a cigarette, it is less clear in (50). Here *ein(er)* refers to a (most likely alcoholic) drink, however there is no German word which could replace *einen* in this construction (the German word for drink 'Getränk' does not match in gender). While in (49) *eine* seems to specify the unit (i.e., smoking one cigarette), this is not applicable to (50) as the expression is usually used in a context where more than one drink is consumed. This observation illustrates that in this case, *ein(er)* and its interpretation cannot be separated from the whole construction.

The type of construction furthermore seems to put additional restrictions on the lexicalized interpretation of *ein(er)*. For example, the use of a plural form is often not possible. This is illustrated in (51), where *ein(er)* is replaced by the form *welch(er)* which is used for the plural. While example (51a) seems at least a bit degraded, (51b) is simply not possible.

- (51) a. #Peter ist draußen um **welche** zu rauchen.
 ‘Peter is outside to smoke *some cigarettes*.’
- b. *Peter und Maria wollen heute **welche** trinken gehen.
 ‘Peter and Maria want to go drinking *some drinks* tonight.’

Cataphoric interpretation

In the cataphoric interpretation, *ein(er)* introduces a new referent which has to be identified in the subsequent discourse. In this interpretational type, *ein(er)* can be used in either the masculine form referring to a male person (see (52a) where *einer* refers to Peter), the feminine form referring to a female person (see (52b) where *eine* refers to Maria), or the neuter form referring to a following proposition or abstract thing in the text (see (52c) where *eines* refers to the proposition *Peter hatte ein Geheimnis* (‘Peter had a secret’)).

- (52) a. **Einer** hatte das Geheimnis durchschaut: Peter.
 b. **Eine** hatte das Geheimnis durchschaut: Maria.
 ‘*One person*_{male/female} had seen through the secret: Peter / Maria.’
 c. **Eines** hatte Maria jedoch durchschaut: Peter hatte ein Geheimnis.
 ‘*One thing* Maria had seen through, however: Peter had a secret.’

A similar distribution of interpretations relating to gender can be found as default for adjectives that appear to be nominalized such as English *the rich* or *the poor*. These expressions are discussed under the terms ‘people deletion’ or ‘human/abstract construction’ in the linguistic literature (Pullum, 1975; Kester, 1996; Giannakidou & Stavrou, 1999; Günther, 2018). Kester (1996) argues that these expressions only appear to be nominalizations but are actually adjectives followed by a null noun (see also Panagiotidis, 2003; Günther, 2018). Kester further argues that the meaning of the expression is dependent on the absence or presence of inflectional morphology in the specific language. In English, which does not mark different genders, the construction always gets the feature [+human]. In German, however, where adjectives are inflected for the three genders

(male, female, and neutral) in prenominal position, we find three different types of construction: two types of human construction, with male gender referring to males and female gender referring to females, as well as the abstract construction with neutral gender, (see Table 3).

Construction	genus	German	translation
Human	masculine	Der Alte	<i>The old man</i>
Human	feminine	Die Alte	<i>The old woman</i>
Abstract	neutrum	Das Alte	<i>The old thing</i>

Table 3: Abstract and human construction after Kester (1996).

As the distribution of interpretations relating to gender for the cataphoric interpretation of *ein(er)* matches that of the human/abstract construction, a close connection of these two linguistic phenomena seems plausible. In fact, it will be argued below that, as has been assumed for the human/abstract construction (for example, Panagiotidis, 2003), *ein(er)* in the cataphoric interpretation is followed by an empty noun.

While other interpretations of *ein(er)* also allow for cataphoricity in the sense that their referent can be picked up in the subsequent discourse, the cataphoric interpretation is special because, here, subsequent mentioning of the explicit referent is obligatory. This is illustrated in (53), which shows an unspecific use of indefinite pronouns without an anaphoric remention. While the pronoun *etwas* (which can also refer to abstract things and propositions) can be used in such a context (see (53a)), the use of *eines* is infelicitous, as (53b) shows.

(53) a. Ich hoffe, dass ich auf dem Workshop **etwas** lernen werde, egal was.

b. *Ich hoffe, dass ich auf dem Workshop **eines** lernen werde, egal was.

‘I hope that I will learn something / one thing at the workshop, no matter what.’

The cataphoric interpretation furthermore remains infelicitous if the rementioning occurs without informational content about the referent. This is illustrated in (54), where the referent of *eines* is rementioned in the second sentence. However, as only a pronoun is used, which does not provide any conceptual information, the example remains infelicitous if the referent is not resolved.

- (54) *Ich hoffe, dass ich auf dem Workshop **eines** lernen werde. Ich will **es** schon lange wissen.
*‘I hope that I will learn **one thing** at the workshop. I wanted to know **it** for a long time.’*

Overview

To sum up, I have proposed six different interpretations of the indefinite pronoun *ein(er)* in German. An overview of the proposed classification with examples can be found in Table 4.

Interpretation of <i>ein(er)</i>	Example
Independent interpretation	Gestern hat mich einer im Zug angesprochen. <i>‘Yesterday, someone spoke to me on the train.’</i>
Impersonal interpretation	Das Licht blendet einen . <i>‘The light dazzles you.’</i>
Elliptic interpretation	Lisa liest ein Buch und Simon liest auch eines . <i>‘Lisa is reading a book and Simon is reading one, too.’</i>
Partitive interpretation	Unser Nachbar hat drei Hunde. Einer bellt immer, wenn ich ihn sehe. <i>‘Our neighbor has three dogs. One always barks when I see him.’</i>
Lexicalized interpretation	Peter ist draußen um eine zu rauchen. <i>‘Peter is outside to smoke one (= a cigarette).’</i>
Cataphoric interpretation	Eines hatte Maria jedoch durchschaut: Peter hatte ein Geheimnis. <i>‘One thing Maria had seen through, however: Peter had a secret.’</i>

Table 4: Overview of six different interpretations of the pronoun *ein(er)* in German.

2.3.3 Basis of the classification

In the last section, I proposed a classification of six different interpretations of the German indefinite pronoun *ein(er)*. I will now justify this classification on the basis of semantic properties of each interpretation and their requirements regarding the discourse context.

Semantic properties

Each of the six interpretations of *ein(er)* is semantically restricted in the sense that its interpretation is either limited to a certain lexicalized characteristic or controlled by the

discourse context. However, the type of semantic restriction varies for the individual interpretations.

The independent interpretation of *ein(er)* can only refer to personal referents (similar to English *someone*). The impersonal interpretation is also limited to the human category and cannot refer to a specific individual but is restricted to a demoted (i.e., impersonal) agent.

In contrast, the elliptic and partitive interpretations of the pronoun are not inherently restricted. As the examples below show, an elliptic or partitive *ein(er)* can refer to human referents (55a) as well as to concrete (55b) or abstract (55c) things. The interpretation of the pronoun in the examples is dependent on the context; it refers anaphorically to a previously introduced NP in the elliptic interpretation and to a group or set that was mentioned before in the partitive interpretation. Because of this special discourse dependency, the pronoun *ein(er)* cannot refer to propositions when it is interpreted as elliptic or partitive.

- (55) a. Peter hat eine Freundin und ich habe auch **eine**.
 ‘*Peter has a girlfriend and I have **one** too.*’
- b. Dort liegen zwei Gabeln. Gib mir bitte **eine**.
 ‘*There are two forks. Please give me **one**.*’
- c. Peter hat drei Wünsche. **Einer** gefällt mir.
 ‘*Peter has three wishes. I like **one**.*’

Semantically more restricted is the lexicalized interpretation of the indefinite pronoun. Here, the meaning of *ein(er)* depends on the construction it occurs in. As such constructions are fixed in the lexicon, *ein(er)* is less flexible here than in the elliptic or partitive interpretations as it can only refer to a restricted number of lexicalized concepts. It seems that these concepts mainly include concrete or abstract things such as cigarettes in *eine rauchen* (‘have a smoke’) or a slap in *eine runterhauen* (‘slap in the face’).

The cataphoric interpretation of the indefinite pronoun is semantically least restricted as it can refer to persons, things, or propositions. However, in this interpretation, the meaning of *ein(er)* depends on the form that is used, more specifically its gender. If *ein(er)* occurs in the masculine or feminine form, it has to refer to a male or female person, respectively. The neutral form *eines* can refer to propositions as well as concrete or abstract things.

To sum up, the independent and impersonal interpretations are restricted to persons, the elliptic and partitive interpretations receive their interpretation from the context, the lexicalized interpretation from the construction it occurs in, and the cataphoric interpretation depends on the morphological form.

The differentiation of interpretations based on semantic restrictions is closely related to the differentiation between context-dependent and independent interpretations of *ein(er)* made by Zifonun (2007). Based on Huddleston and Pullum (2002), Zifonun argues that, in general, there are three main pronominal interpretations of words that can be used adnominally as well (for example, *einige* ‘some’ or *ein(er)* which has the same form as the German indefinite article): simple, partitive, and special. Simple and partitive pronominal interpretations have in common that the pronoun has to be interpreted as context-dependent (i.e., its interpretation is dependent on an antecedent in the preceding discourse). ‘Simple’ here refers to an interpretation where the pronoun refers to a (different) referent with the same characteristic as the antecedent⁸ (i.e., the elliptic interpretation), whereas ‘partitive’ refers to an interpretation as a subset of the antecedent. In contrast, the special pronominal interpretation is not context-dependent (Zifonun, 2007).

Considering the differentiation between context-dependent and independent interpretations of pronouns made by Zifonun, the six different interpretations of *ein(er)* can be classified as follows: the independent, impersonal, and cataphoric interpretations are independent, as their meaning is specified in the lexicon, whereas the elliptic, partitive, and lexicalized interpretations are context-dependent. I count the lexicalized interpretation as context-dependent because the interpretation of the pronoun depends on the construction it occurs in, which can be seen as immediate context. However, only the elliptic and partitive interpretations are also anaphoric.

The cataphoric interpretation always refers to a referent in the subsequent discourse. However, it is counted here as independent because while for the partitive and elliptic interpretation of *ein(er)*, both meaning and form (i.e., gender) depend on their antecedent, semantic restrictions of the cataphoric interpretation are only dependent on the morphological form of the pronoun, and the purpose of the forced anaphoric pick up is a further characterization of the intended referent. The formal difference is illustrated in example

⁸ Note that Zifonun excludes ellipsis from her explanation of what she calls simple context-dependent interpretation. The antecedent for this interpretation therefore is a referent, while I assume for the elliptic interpretation that only the NP acts as antecedent.

(56). For the elliptic interpretation of *ein(er)*, shown in (56a), gender depends on the antecedent and is thus masculine in the example, as is the antecedent *Couch* ('couch'). For the cataphoric interpretation of *ein(er)* however, genus depends on the gender of the intended referent, and as *ein(er)* here refers to a piece of furniture, the neutral form has to be used, as illustrated in (56b).

- (56) a. Ich hätte gerne eine Couch. Ich glaube einfach in meinem Haushalt fehlt **eine**.
*'I would like to have a couch. I just think **one** is missing in my household.'*
- b. **Eines** fehlt noch in meinem Haushalt: eine Couch.
*'**One thing** is still missing in my household: a couch.'*

Discourse context

Each interpretation of *ein(er)* has different requirements regarding the context it occurs in for the interpretation to even be possible. I will use these discourse requirements as a second criterion to support the proposed classification.

The independent interpretation is least restricted in its discourse requirements as it can occur in both referential (see (57a)) as well as non-referential environments (see (57b)), with no additional requirements.

- (57) a. Gestern hat mich in der Bahn **einer** angesprochen.
*'Yesterday, **someone** spoke to me on the train.'*
- b. Wenn mich **einer** angesprochen hätte, wäre ich sofort weggegangen.
*'If **someone** had spoken to me, I would have left immediately.'*

For the impersonal interpretation, we find two contextual requirements: first, the impersonal interpretation of *ein(er)* is not allowed in a context that requires a specific individual as a referent, and therefore the impersonal interpretation is unavailable in (58); second, as already discussed above for the impersonal interpretation, *ein(er)* has to occur in the accusative or dative case and thus in object position or as part of a prepositional phrase. In the nominative case and thus subject position, German uses the pronoun *man*, and *ein(er)* cannot be interpreted impersonally.

- (58) Gestern habe ich in der Bahn **einen** angesprochen.
*'Yesterday, I spoke to **someone** on the train.'*

As seen above, in the elliptic interpretation, the meaning of *ein(er)* depends on the context. This interpretation therefore requires a suitable NP in the context as an antecedent.

The NP can occur in either a definite or an indefinite noun phrase (59a), can be referential (59a) or non-referential (59b) or even generic (59c), but it has to match in gender with the pronoun *ein(er)* (this is why (59d) is not possible). Note that, as for noun phrase ellipsis in general, there also seem to be instances where pragmatic control, i.e. deictic reference to a non-linguistic antecedent in the immediate surrounding, of the antecedent is possible. For more information and further references, see for example the overview in Saab (2019).

- (59) a. Peter gehört **das Fahrrad / ein Fahrrad**. Ich hätte auch gerne **eines**.
 ‘Peter owns *the bicycle / a bicycle*. I would like to have *one*, too.’
- b. Peter hätte gerne **ein Fahrrad**. Ich hätte auch gerne **eines**.
 ‘Peter would like to have *a bicycle*. I would like to have *one*, too.’
- c. Peter mag **Fahrräder**_{neut.} Ich hätte auch gerne **eines**_{neut.}
- d. Peter mag **Fahrräder**_{neut.} *Ich hätte auch gerne **einen**_{masc.}
 ‘Peter likes *bicycles*. I would like to have *one*, too.’

The partitive interpretation of *ein(er)* is also characterized by context-dependency, but discourse requirements seem even stronger here, as the partitive interpretation of *ein(er)* is presuppositional (i.e., it presupposes the existence of a group or set in the discourse). To license a partitive interpretation, the occurrence of a noun phrase is therefore not enough. Rather, it requires an established discourse referent, which consists of more than one individual member that *ein(er)* can then refer to.

There is not much to say about the lexicalized interpretation of *ein(er)*, as it is only possible in certain fixed constructions and can therefore only occur in such discourse contexts.

The cataphoric interpretation requires a subsequent coreferential rementioning of its referent in the context. Interestingly, rementioning in itself is not enough, as the anaphoric pick up has to contain conceptual material such as a full proposition, a name of a referent, or a descriptive noun phrase. Anaphoric uptake with only a pronominal form is not enough to satisfy the context requirement of the cataphoric indefinite *ein(er)*.

To sum up, I have described different discourse requirements that have to be fulfilled to make the different interpretations of *ein(er)* possible. While those requirements differ for each of the six described interpretations, most discourse contexts are still unspecified in the sense that they allow for more than one interpretation of *ein(er)*. For example, in (60),

the pronoun *einen* is ambiguous between an impersonal, independent, or elliptic interpretation, with the elliptic one probably being pragmatically less likely.

- (60) Peter hat sich einen Hund gekauft. Das ärgert **einen**.
 ‘Peter bought a dog. This annoys *you / someone / one*.’

This raises the questions of which interpretation of *ein(er)* is favored in an unspecified discourse context over another and which discourse or context factors besides pragmatic reasoning boost a certain interpretation. These questions will be addressed in Chapters 5 and 6, more thoroughly focusing on the anaphoric interpretations of *ein(er)*.

An overview of the differentiations made in this subchapter can be found in Table 5. As the table shows, both semantic properties and context requirements clearly distinguish the six different formulated interpretations, with the only exception being the semantic restriction for both the elliptic and the partitive interpretations depending on the respective antecedent. I will more closely look at the anaphoric interpretations in Chapter 4 which will provide further arguments for the differentiation between elliptic and partitive interpretation.

Interpretation of <i>ein(er)</i>	Gender	Semantic restriction	Context-dependent	Context requirements
Independent	masc / (fem)	Persons	no	No requirements
Impersonal	masc	Persons, only impersonal or generic	no	Accusative or dative case / non-specific context
Elliptic	masc / fem / neut	Dependent on antecedent	yes, anaphoric	Suitable (gender) NP
Partitive	masc / fem / neut	Dependent on antecedent	yes, anaphoric	Presuppositional: established discourse referent that is a set or group
Lexicalized	masc / fem ⁹	Dependent on construction	yes	In a fixed construction
Cataphoric	masc / fem / neut	No restrictions (if matching gender)	no	Subsequent rementioning of the referent

Table 5: Overview of semantic restrictions and context requirements for *ein(er)*.

⁹ For the lexicalized interpretation of *ein(er)*, the form depends on the individual construction. While there seem to be uses for only the masculine and feminine forms, there does not seem to be any systematic reason why we could not find a construction in German that uses the neutral form.

2.3.1 Previous classifications

Although the pronoun *ein(er)* has not received much attention in the linguistic literature, two other classifications of different interpretations have been made before. The German grammar ‘Der Duden’ gives a short but more general overview of the word types with the stem *ein* (as pronoun, article, etc., Duden, 2016: §446-§455; see also section 2.2) and the interpretations of the pronominal form in particular (Duden, 2016: §416). The most extensive discussion of the German indefinite pronoun *ein(er)*, which also includes a classification of its different interpretations, can be found in Zifonun (2007), who gives a descriptive overview of the grammar of indefinite pronouns in German. In the following, I will briefly review the classifications by the Duden and Zifonun.

For the pronominal form *ein(er)*, the Duden differentiates between the interpretation as an indefinite pronoun with the meaning *man*, *jemand*, or *jedermann* (impersonal *one*, *someone*, or *anybody*), the use in colloquial constructions, the accusative and dative form of *man* (impersonal *one*), and the elliptic use of the indefinite article.

In the first interpretation, the Duden argues that *ein(er)* is an indefinite pronoun whose meaning can be similar to that of *man*, *jemand*, or *jedermann* (impersonal *one*, *someone*, or *anybody*), or even a personal pronoun, without discussing more closely in which context(s) each paraphrase would be most appropriate (see the examples in (61), Duden, 2016: 315). Indeed, it seems that the relatively free interpretation might be due to the examples selected by the Duden. For example, in (61a), *einer* can be paraphrased not only as *jemand* (‘someone’) but also as the impersonal pronoun *man* (generic ‘one’), because the sentence itself expresses a general or generic statement. In (61b), however, it can only be paraphrased by *jemand*. Example (61c) shows an explicit partitive use of the pronoun *ein(er)*, which illustrates that the Duden fails to distinguish partitive interpretations. Note however that all of the suggested paraphrases refer exclusively to persons.

- (61) a. Was soll **einer** dazu schon sagen!
 ‘What can *someone* say about that!’
- b. Das ist **einer**!
 ‘That is *someone*!’
- c. Der Wagen gehört **einem** unserer Nachbarn.
 ‘The car belongs to *one* of our neighbors.’

Second, the Duden describes the occurrence of the pronoun *ein(er)* in certain constructions mainly used in colloquial speech. In these fixed expressions or figures of speech, *ein(er)* refers to a term which is easily completed in the situation, as shown in the example illustrated in (62) (Duden, 2016: 315).

- (62) Hau ihm **eine** (= eine Ohrfeige)!
 ‘Slap him **one** (= in the face)!’

As a third interpretation of the pronominal *ein(er)*, the Duden describes its use as an accusative or dative form of the German pronoun *man* (see (63)). According to the Duden, this pronoun refers to one or more (often several) people that are not precisely defined by the speaker. Statements made with *man* can refer to a specific situation or can convey propositions that are generally valid. However, the Duden does not further specify how this interpretation is different from the interpretation as an indefinite pronoun, discussed above, which has already been argued to have a meaning similar to that of the pronoun *man*.

- (63) a. **Man**_{nom} ärgert sich über so etwas.
 ‘**You / One** gets annoyed about something like that.’
- b. So etwas ärgert **einen**_{acc}.
 ‘Such things annoy **you**.’
- c. So etwas geht **einem**_{dat} nahe.
 ‘Something like that gets to **you**.’

Lastly, the Duden mentions the following interpretation of the fully inflected pronominal form *ein(er)* (illustrated in (64), from Duden, 2016: 336), which is labeled an elliptic use of the indefinite article. In accordance with my definition of pronominal *ein(er)*, which is based on the formal criterion of forming a constituent, I consider ellipsis as one interpretation of the indefinite pronoun *ein(er)*.

- (64) Das hier ist ein Messer aus Silber, das dort **eins** / **eines** aus Stahl.
 ‘This is a knife made of silver, this is **one** made of steel.’

An overview of the four different interpretations of *ein(er)* described by the Duden can be found below in Table 6.

Interpretation	Example
indefinite pronoun (as <i>man</i> , <i>jemand</i> , or <i>jedermann</i>)	Was soll einer dazu schon sagen! <i>What can anyone say about that!</i>
Colloquial construction	Hau ihm eine (= eine Ohrfeige)! <i>Slap him in the face!</i>
Suppletive to <i>man</i>	So etwas ärgert einen . <i>This annoys you.</i>
Article, elliptic	Das hier ist ein Messer aus Silber, das dort eines aus Stahl. <i>This is a knife made of silver, this is one made of steel.</i>

Table 6: Classification of the pronominal form *ein(er)* by the Duden (2016).

Zifonun's (2007) is the only current extensive descriptive study on indefinite pronouns in German that broadly describes different interpretations of the indefinite pronoun *ein(er)*. She distinguishes five different contexts where pronominal *ein(er)* can be used: the context-dependent partitive interpretation, the context-dependent simple attributive interpretation, the context-dependent simple interpretation as a predicate, the independent use with reference to persons, and the generic, impersonal interpretation suppletive to *man*. An overview can be found in Table 7.

Type	Interpretation of <i>ein(er)</i>	Example
Context-dependent	partitive	Dort liegen eine Menge Bücher. Gib mir doch mal eines (davon)! <i>There are a bunch of books. Give me one (of them)!</i>
	Simple, attributive	Ich habe ein Fahrrad. Mein Freund hat auch eines . <i>I have a bicycle. My friend has one too.</i>
	Simple, predicative	Elsa ist eine begeisterte Sportlerin. Ich bin auch eine . <i>Elsa is a passionate athlete. I'm one as well.</i>
Independent	Reference to persons	Einer hat vergessen das Licht auszumachen. <i>Someone forgot to turn off the light.</i>
	impersonal	Das ärgert einen . <i>That's what upsets you.</i>

Table 7: Classification of the pronominal form *ein(er)* by Zifonun (2007).

The main distinction drawn by Zifonun (2007) is between context-dependent and so-called independent interpretations of the indefinite pronoun *ein(er)*. In context-dependent interpretations, the meaning of the pronoun *ein(er)* depends on contextual information and is usually linked by an anaphoric relation. In independent interpretations, however, the meaning is stable and independent of the textual surroundings (see also section 2.3.2).

For context-dependent interpretations, Zifonun differentiates between partitive (65a), simple attributive (65b), and simple predicative (65c) interpretations.

- (65) a. Dort liegen **eine Menge Bücher**. Gib mir doch mal **eines** (davon)!
‘There are a bunch of books. Give me one (of them).’
- b. Ich habe **ein Fahrrad**. Mein Freund hat auch **eines**.
‘I have a bicycle. My friend has one too.’
- c. Elsa ist **eine begeisterte Sportlerin**. Ich bin auch **eine**.
‘Elsa is a passionate athlete. I’m one as well.’

In the partitive interpretation (65a), *ein(er)* picks up one element of a group or set that has already been introduced in the discourse. In the simple context-dependent interpretation, the pronoun refers to a new referent which has the same semantic characteristics as an already introduced one. Zifonun (2007) argues, that the simple interpretation and the partitive interpretation of the indefinite pronoun *ein(er)* are not to be mistaken. While in the simple attributive interpretation the antecedent and pronoun refer to different entities or sets of entities with the same semantic characteristics, in the partitive interpretation the pronoun refers to a subset of the entities described by the antecedent (Zifonun, 2007).

The simple interpretation can be used attributively (65b) or predicatively (65c), differentiated by sentence position. However, this differentiation may be too fine-grained, as sentence position can be varied not only for the context-dependent simple interpretation but also, for example, for the independent interpretation with reference to persons. In fact, the examples by the Duden cited above even include such an example, which is repeated below in (66). In the example, *einer* is interpreted as describing a human being with some kind of exceptional quality (for example having exceptionally impressive abilities; the exact type of exceptional quality is determined by the context). If we keep in mind that the purpose of a predicative is to characterize a referent, Zifonun’s context-dependent simple interpretation is naturally the most likely interpretation of *ein(er)* to occur in a predicative position, as this interpretation can refer to different types of properties. However, I argue that differentiation between attributive and predicative is not dependent on one interpretation of *ein(er)* but rather describes a classification of different types of sentence constituents an indefinite can occur in.

- (66) Das ist **einer**!
‘That is someone!’

For the independent interpretations, Zifonun differentiates what she calls ‘spezieller Gebrauch’ (special use), where the reference of *ein(er)* is restricted to persons but can be used in both specific (as in (67a)) and non-specific contexts, and the generic interpretation, where *ein(er)* is suppletive to the pronoun *man* as shown in (67b), resulting in five different interpretations of the German indefinite pronoun *ein(er)*.

- (67) a. **Einer** hat vergessen das Licht auszumachen.
 ‘*Someone forgot to turn off the light.*’
- b. Das ärgert **einen**.
 ‘*That upsets you.*’

To sum up, I have reviewed two classifications of different interpretations of the indefinite pronoun *ein(er)* in German. While the grammar *Der Duden* differentiates four interpretations, Zifonun (2007) differentiates five. Both classifications give important background information on the interpretation of *ein(er)*, however, I have argued that some differentiations reviewed in this chapter are too fine-grained (for example, Zifonun’s differentiation between simple attributive and predicative) while others are not fine-grained enough (for example, the *Duden* collapses the partitive and independent interpretations). Furthermore, both classifications fail to account for the cataphoric interpretation of *ein(er)*, and the lexicalized interpretation was only mentioned by the *Duden*. Therefore, the new classification, proposed in the previous sections, seems to be suited better to capture all possible interpretations of the indefinite pronoun *ein(er)* in German.

2.4 How form and interpretation relate: Filling the nominal slot

In section 2.2.2, I have argued, on the basis of work by Elbourne (2005), that the pronoun *ein(er)* has an underlying structure of a determiner followed by a covert nominal. In this section, I will illustrate how this structure can explain the variety of possible interpretations that distinguishes *ein(er)* from other indefinite pronouns. In other words, I will discuss how the six interpretations – independent, impersonal, elliptic, partitive, lexicalized, and cataphoric – relate to different options for filling the nominal slot.

Elbourne describes three cases where the NP in the pronominal structure can be deleted. First, NPs can undergo PF deletion in the environment of an identical NP. This

phenomenon is called NP-deletion or NP-ellipsis and is well described in the linguistic literature (cf. Jackendoff, 1968, 1971; Perlmutter, 1970). An example can be found in (68), where *message* in the second part of the sentence is repeated and can therefore be dropped. This is also possible with *ein(er)*, as example (69) shows. Here *Nachricht* ('message') is repeated and can be dropped accordingly.

(68) Peter received Sue's message but missed Bill's ~~message~~.

(69) Peter hat eine Nachricht von Sue bekommen, aber eine ~~Nachricht~~ von Bill verpasst.

'Peter received a message from Sue but missed a / one ~~message~~ from Bill.'

Note that NP-ellipsis requires an explicit antecedent in the linguistic environment; it is not possible to reconstruct a suitable NP if it has not actually occurred explicitly. Elbourne illustrates this with the following example:

(70) Mary is married. *And Sue's is the man drinking the Martini.
(Elbourne, 2005: 63)

Even though the word *married* is making the relation expressed by the word *husband* salient, the latter is not mentioned explicitly and the second sentence is therefore ungrammatical.

Second, it is also possible to drop the NP if something in the immediate environment can be invoked with deictic aid. In a context where two people are looking at a birthday table full of presents and one of them points at an especially big present, she can utter the sentence in (71) with *Sue's* referring to *Sue's present*.

(71) Only Sue's was bigger.

The same is true for *ein(er)*. In our example situation, after opening up the present it becomes apparent that the large present is a juicer. In German, it is possible to utter the sentence in (72) with *einen* referring to a juicer ('einen Entsafter').

(72) Ich habe letztes Jahr auch **einen** geschenkt bekommen.
'Last year, I got **one** as well.'

Third, and lastly, the NP slot can also be filled by a functional default item which is always available and does not need to be recovered. Elbourne argues that this default item is a functional instead of a lexical item and is applicable to all entities of type *e*. It is used

in a situation where there is no antecedent in the immediate or linguistic environment. I take the default item to be an instance of a semantically empty noun as described by Panagiotidis (2003) (see also Saab, 2019). Empty nouns are listed in the lexicon instead of having to be licensed and identified in the syntactic context they appear in.

The use of an empty noun is illustrated below, where *einer* refers to an unspecified human referent. As there is no antecedent in the linguistic or immediate environment, the nominal slot has to be filled by an empty noun.

- (73) Hat hier **einer** aufgeräumt?
 ‘Did *someone* tidy up in here?’

However, in example (73) the pronoun does not seem to be applicable to all entities of type *e* as *einer* here can only refer to humans. I suspect that this is due to morphological properties and will discuss this topic in more detail below.

In section 2.3, I have argued that there are six interpretations of the indefinite pronoun *ein(er)* in German: independent, impersonal, elliptic, partitive, lexicalized, and cataphoric. I will now discuss how our assumption of a nominal slot in the structure can account for this variety in interpretations. I want to argue that there are two options for filling the nominal slot. The slot can be filled with reference to the context, as is the case for the elliptic, partitive, and lexicalized interpretations, or it can be filled by an empty noun, which is the case for the independent, cataphoric, and impersonal interpretations.

I argue that NP-ellipsis is responsible for the elliptic interpretation of *ein(er)*. This interpretation therefore is subject to the same conditions described by Elbourne (i.e., it requires a nominal antecedent either in the preceding discourse or an antecedent has to be invoked in the immediate surroundings with deictic aid). This antecedent has to be of the type NP. For example, compound nouns in German are islands in that each individual compound is not available as an antecedent (see the discussion in Chapter 4). However, as NP-ellipsis targets NPs and not semantic types, it is maximally flexible with regard to what types of nominals it concerns. In the elliptic interpretation, *ein(er)* can therefore refer to a number of different types of entities such as humans, concrete things, or even abstract concepts.

This flexibility is a property the elliptic interpretation shares with the lexicalized interpretation of *ein(er)*. While this interpretation is limited to a number of fixed expressions, the denotation of *ein(er)* in this interpretation still subsumes concrete things, for

example a cigarette in *eine rauchen* ('smoke a cigarette'), as well as abstract concepts such as a slap in *eine runterhauen* ('slap in the face'). I suspect that the cases where *ein(er)* is used lexicalized developed diachronically in very stereotypical situations. For example, the concept of smoking already makes the concept of a cigarette very prominent. At some point, they became fixed expressions where the nominal after *ein(er)* could be dropped.

I further assume that in the case of the independent, cataphoric, and impersonal interpretations, the nominal slot is filled by an empty noun. However, the denotation of the pronoun is limited by morphological cues of the determiner (see also the discussion on the human/abstract construction in Kester, 1996). This is most visible for the cataphoric interpretation. Here, the pronoun has the feature [+male] if its gender is masculine, [+female] if it is feminine, and [+abstract] if it is neuter. The independent interpretation of *ein(er)* is used in the generic masculine and therefore always gets the feature [+human]. The same holds true for the impersonal interpretation, but its impersonal or quasi-universal interpretation requires additional inferences at sentence level. This however seems to be true for a number of impersonal pronouns, for example the antecedentless *they* in English (Cabredo Hofherr, 2003).

The last interpretation I have to mention is the partitive interpretation of *ein(er)*. I assume that this interpretation is special in that it actually differs in underlying structure from the other five interpretations. I assume that in the partitive interpretation, *ein(er)* is followed by a null partitive pronoun that replace a partitive phrase as illustrated in (74) (for more information see Chapter 4). An overview of how the different interpretations of *ein(er)* relate to filling the nominal slot can be found in Table 8.

(74) *einer* \emptyset_{Part}

This chapter's purpose has been to combine the two previous assumptions that there are six different interpretations of the pronoun *ein(er)* in German and that *ein(er)* is a determiner followed by a silent noun. I have discussed how these two assumptions are connected and how different possibilities for filling the nominal slot can account for the variety of interpretations of the indefinite pronoun *ein(er)* in German.

Interpretation	Structure	Meaning of nominal slot
Elliptic	<i>ein(er)</i> NP	NP-deletion
Lexicalized	<i>ein(er)</i> NP	Fixed nominal, at some point dropped
Independent	<i>ein(er)</i> NP	Empty noun (+human)
Impersonal	<i>ein(er)</i> NP	Empty noun + inferences at sentence level
Cataphoric	<i>ein(er)</i> NP	Empty noun + morphological cues
Partitive	<i>ein(er)</i> \emptyset_{Part}	Null partitive pronoun

Table 8: Overview of options for filling the nominal slot.

2.5 Summary

The current chapter has given a broad overview of formal properties as well as semantic and pragmatic properties of the German indefinite pronoun *ein(er)*. I have argued that compared to other German indefinite pronouns, *ein(er)* is especially interesting for linguistic consideration because it allows a variety of different interpretations. The goal of this chapter has been to classify and describe these interpretations and link these considerations to underlying structural properties of the pronoun.

After a short introduction, section 2.2 discussed formal properties of the pronoun *ein(er)*, such as its inflectional paradigm or dialectal variation, and used formal characteristics to differentiate it from other German words which share the same stem. Then, I proposed that the pronoun *ein(er)* is actually the same determiner as the German indefinite article that is followed by a covert noun in the case of the pronoun. In section 2.3, which focused on different interpretations of the pronoun, I proposed a new classification of six different interpretations of *ein(er)*: independent, impersonal, elliptic, partitive, lexicalized, and cataphoric. I first described these interpretations and reviewed the respective literature and then argued that these six interpretations can be differentiated by their semantic restrictions as well as their discourse requirements. In section 2.4, building on the assumption that the pronoun *ein(er)* is the same determiner as the German indefinite article followed by a covert noun, I showed how its structure can in part account for the variety of interpretations, as the nominal slot can either be filled with an empty noun or rely on contextual information.

Having focused on the individual properties of one pronoun, we will now turn to indefinite pronouns more generally. The next chapter will review the work that has been done on this class of pronouns and use this information to further characterize the German indefinite pronoun *ein(er)*.

3 German *ein(er)* and other indefinite pronouns

3.1 Introduction

Indefinite pronouns, as small and irrelevant they may sometimes seem, provide insights in core linguistic phenomena such as reference, polarity or specificity. However, compared to other types of pronouns, such as personal or demonstrative pronouns, indefinite pronouns and especially their role in discourse still seems to be a bit under-investigated. This might be due to the fact that the term ‘indefinite pronoun’ subsumes a number of different expressions with different properties and characteristics. Especially in linguistic grammars, the term ‘indefinite pronoun’ is often used to subsume a number of quite heterogeneous pronouns that do not fit into other classifications such as personal or demonstrative pronouns (e.g., Grevisse, 1986; Duden, 2016). Therefore, a lot of the research that will be discussed in this chapter is not only centered on indefinite pronouns but gives some information on them while concentrating on phenomena such as epistemic specificity or negative polarity.

The goal of this chapter is to give some background information on indefinite pronouns in general and apply this information to the German indefinite pronoun *ein(er)*. In section 3.2, I will first discuss how an indefinite pronoun can be defined and which properties are characteristic of this group. Then, I will review the main functions of indefinite pronouns, which will tell us about their semantic properties, and furthermore discuss their pragmatic properties. Section 3.3 focuses on the position of *ein(er)* among other indefinite pronouns, illustrating why it was chosen as a research object for this dissertation. It will be asked what properties distinguish *ein(er)* from other indefinite pronouns and how it relates to pronouns in other languages that are also based on the numeral ‘one’. In section 3.4, the findings on typical semantic and pragmatic properties of indefinite pronouns will be used to further characterize German *ein(er)*. The chapter will end with a short summary.

3.2 Semantic and pragmatic properties of indefinite pronouns

3.2.1 Defining indefinite pronouns

Indefinite pronouns are characterized as being both indefinite and a pronoun. Pronouns can replace normal DPs in a sentence, and unlike articles they stand independently

without a noun. Pronouns are furthermore characterized as being a closed class with limited conceptual information (for example, Sugamoto, 1989; Frosch, 2007). While some literature uses the term ‘indefinite pronoun’ more broadly (see, for example, Haspelmath, 1997) (i.e., subsuming not only pronouns but also certain adverbs, adjectives, verbs, and indefinite articles), this dissertation is only concerned with pronouns that can replace a normal DP in a sentence.

Straightforwardly, indefinite pronouns are those pronouns that are used for indefinite reference. However, in traditional grammars that distinguish between personal, demonstrative, relative, interrogative, and indefinite pronouns, the term is often used as a ‘waste-basket category’ (Haspelmath, 1997: 11), an observation which seems to hold for German as well. In the German grammar ‘Der Duden’, which distinguishes seven types of pronouns (personal, reflexive, possessive, demonstrative, relative, interrogative, and indefinite), the class of indefinite pronouns shows the largest range and variety of different forms (see the list in (75)).

- (75) etwas, genug, alle, jeder, sämtliche, beide, einige, etliche, manche, welche, solche, irgendwelche, irgendein, kein, allerlei, solcherlei, derlei, dreierlei, ein bisschen, ein wenig, ein paar, irgendetwas, irgendwas, was, man (einen, einem), jedermann, jemand, irgendjemand, irgendwer, wer, niemand, nichts, unsereiner, deinesgleichen, dergleichen (Duden, 2016: 253, §350)

The list shows that the subcategory ‘indefinite pronoun’ in the Duden is used to collect different types of pronominal forms that are used in some form for indefinite reference. However, the shown forms behave very differently with regards to their semantic properties. For example, the list in (75) also includes quantitative, universal, and negative expressions. This illustrates that indefinite pronouns are often defined negatively (i.e., as those that do not belong to another pronoun group).

For this dissertation, however, I want to develop a positive characterization, and will define indefinite pronouns as pronominal expressions (i.e., expressions that carry at most minimal conceptual information, like person or thing) that can be used to introduce new and unfamiliar referents into the discourse. For example in (76a), *someone* introduces a new, unspecified human referent. This definition distinguishes indefinite pronouns from full indefinite noun phrases, definite pronouns, or negative expressions. In (76b), *a bus driver* also introduces a new discourse referent, but the indefinite noun phrase contains a noun with conceptual information (here ‘bus driver’) so it does not fall under the category of pronominal expression. The personal pronoun *him* in (76c) counts as a pronominal

expression, but is coreferential with an already introduced referent, here Peter. Lastly, negative expressions, like *nobody* in (76d), are never referential and therefore also cannot be used to introduce new discourse referents.

- (76) a. Yesterday, Peter met Sandra in town. Sandra asked **someone** for directions.
 b. Yesterday, Peter met Sandra in town. Sandra asked **a bus driver** for directions.
 c. Yesterday, Peter met Sandra in town. Sandra asked **him** for directions.
 d. Yesterday, Peter met Sandra in town. Sandra asked **nobody** for directions.

In terms of formal semantics (Allwood et al., 1977; Heim & Kratzer, 1998), the interpretation of an indefinite pronoun translates into the existential quantifier ($\exists x$) with optional extra information depending on the individual indefinite pronoun. For example, English *someone* contains the additional information that it refers to a person.

Compared to the huge body of literature on personal pronouns and other pronominal forms, indefinite pronouns have received much less attention. The most influential study on indefinite pronouns is a typological study by Haspelmath (1997), which is based on detailed data on 40 languages and more limited data on 100 languages of the world. He argues that indefinite pronouns come in series, like the English ‘some’ series (*someone*, *something*, *somewhere*, etc.), with one member for each of the major ontological categories such as person, thing, property, place, time, manner, amount, and a few others (Haspelmath, 1997). As (77) illustrates for English, indefinite pronouns often consist of a stem indicating the ontological category (in English, for example, *body* for persons, *thing* for things, and *where* for places) and a formal element shared by all members of an indefinite pronoun series (in example (77) *some*, *any*, or *no*, Haspelmath, 1997; Lehmann, 2015; for an analysis of the complex morphology of some German indefinite pronouns, see, for example, Weiß, 2002; Roehrs & Saab, 2016; Leu, 2017).

- (77) a. **some-series:** somebody, something, somewhere, ...
 b. **any-series:** anybody, anything, anywhere, ...
 c. **no-series:** nobody, nothing, nowhere, ...

3.2.2 Different functions of indefinite pronouns

We saw in the previous section that the term ‘indefinite pronoun’ often subsumes a quite heterogeneous set of expressions. Furthermore, indefinite pronouns appear in a number of different contexts and show different semantic properties. For example, as (78) shows, they can either refer to a specific referent (78a), appear under negation (78b), or express free choice (78c).

- (78) a. To find the marketplace, I had to ask **someone** for directions.
b. There was **nobody** to ask for directions, so I couldn’t find the marketplace.
c. You can ask **anyone** for directions; in this town, everyone knows the marketplace.

In which contexts indefinite pronouns can appear depends on the individual indefinite pronouns themselves, which often express certain semantic properties. For example, the pronouns in (78) could not be interchanged freely without changing the meaning of the sentences.

In his typological study, Haspelmath (1997) describes this observation as different functions of indefinite pronouns. Also considering formal properties, he defines nine core functions and argues that in the languages of the world, different series of indefinite pronouns are used depending on which function they express (with one series being able to express multiple functions). Crucially, Haspelmath argues that which functions are expressed by a particular series of indefinite pronouns is not arbitrary and proposes that in all languages of the world, indefinite pronoun series can only cover functions that lie next to each other on the implicational map shown in Figure 1. In other words, the function of an individual pronoun series is usually underspecified, but this underspecification is systematic rather than arbitrary.

In the following, I will describe the different functions of indefinite pronouns, building on Haspelmath’s work and adding additional research to get more information on the semantic properties of indefinite pronouns.

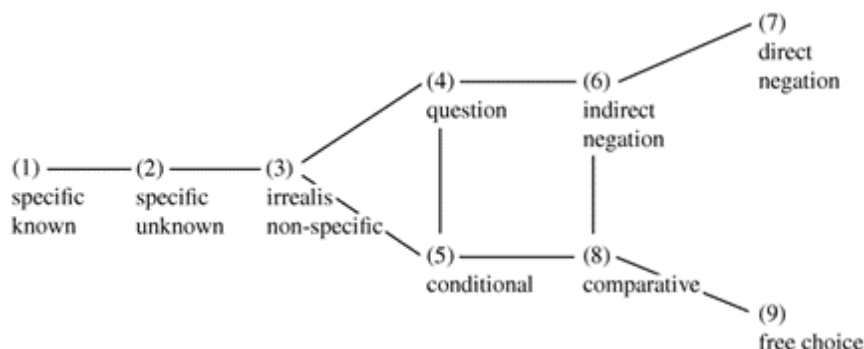


Figure 1: Implicational map for functions of indefinite pronoun series (Haspelmath, 1997:64).

Specificity

Haspelmath argues that in some languages, different indefinite pronouns are used depending on whether an expression is understood as specific or non-specific. For him, an expression is specific if the speaker presupposes the existence and unique identifiability of its referent (Haspelmath, 1997: 38). To avoid confusion, I will stick with this speaker-centered definition of specificity. However, the phenomenon of specificity in itself is one of the main topics in studies on indefinites (e.g., Fodor & Sag, 1982; Farkas, 2002; von Heusinger, 2002), and its definition is often not so clear, as the term is used in different contexts (for an overview see von Heusinger, 2011, 2019).

The difference between specific and non-specific indefinite pronouns is illustrated in (79). In (79a) the speaker uses an indefinite pronoun to refer to a known referent, which therefore has to exist and is uniquely identifiable for the speaker. In (79b), however, multiple persons are addressed, so the pronoun is not referential and is therefore non-specific in Haspelmath's terms. (79c) is ambiguous between a specific and a non-specific reading. In the former, the speaker has an individual in mind he wants to come, for example Sue, whereas in the latter, he just wants any, non-specific person to come.

- (79) a. I'm meeting **someone** for lunch.
 b. Can **someone** help me?
 c. It would like it, if someone came over.

Büring (2011) argues that indefinite pronouns seem less prone to specific interpretations than full indefinite noun phrases. This phenomenon might be related to the observation that the more descriptive content a noun phrase has, the more likely it is to have a specific

interpretation (Fodor & Sag, 1982). As indefinite pronouns have no descriptive content at all, an unspecific interpretation becomes very likely.

Knowledge of the speaker

Specific interpretations of indefinite pronouns can furthermore be distinguished by knowledge of the speaker (i.e., whether the speaker is able to identify the referent of an indefinite pronoun). An example illustrating this distinction is the German indefinite pronoun *irgendein(er)*, which indicates a speaker's lack of knowledge or ignorance regarding the identity of the referent. For example, a sentence like (80) is odd in a situation where the speaker actually knows who *irgendeiner* refers to (i.e., who called).

- (80) **Irgendeiner** hat angerufen.
 ‘*Someone has called.*’

Indefinites indicating a speaker's lack of knowledge are treated in the literature under the term ‘epistemic indefinites’ (e.g., Alonso-Ovalle & Menéndez-Benito, 2003; Aloni & Port, 2010). It is argued that by signalling ignorance on the part of the speaker, these indefinite pronouns or indefinite determiners convey information about the epistemic state of the speaker. For example, when uttering the sentence in (80), the speaker signals that she cannot identify the person who called. Epistemic indefinites are quite robustly attested cross-linguistically (for German *irgendein(er)*, see Kratzer & Shimoyama, 2002; Aloni, 2007; Chierchia, 2013; for further references on epistemic indefinites, see the overview in Alonso-Ovalle & Menendez-Benito, 2015)

Negation

Many languages have special indefinite pronouns that are used to express sentence negation, for example English *nobody* or German *niemand*, as illustrated in (81).

- (81) a. **Nobody** managed to solve the puzzle in time.
 b. **Niemand** schaffte es, das Rätsel rechtzeitig zu lösen.

Depending on the language, an indefinite pronoun by itself either is sufficient to express sentential negation or co-occurs with verbal negation. While languages like English and German belong to the first class, languages like Italian belong to the second (see (82) from Penka & Zeilstra, 2010: 779).

- (82) Gianni **non** ha telefonato a **nessuno**.
 ‘Gianni *didn’t* call **nobody/somebody**.’

The Italian sentence contains both the sentence negation particle *non* as well as the negative indefinite pronoun *nessuno*. However, at clause level there is only one semantic negation, which is illustrated by the English translation. The phenomenon where two (or more) negative elements yield only one semantic negation is called Negative Concord (NC) and has been discussed extensively in the literature (e.g., Labov, 1972; Haspelmath, 1997, 2005; Giannakidou, 1997, 2000; Penka & Zeilstra 2010).

Negative polarity

In some languages, series of indefinite pronouns are associated with negative environments, but not restricted to direct negation. They can be used in conditional, comparative, and interrogative clauses as well as for indirect negation. Being able to stand in those environments, they belong to the class of negative polarity items (NPI; for an overview of negative polarity items and further references, see Giannakidou, 2011 or Penka & Zeilstra, 2010). A well-known example of an indefinite pronoun that is a negative polarity item is the English *any* series. As example (83) shows, *any* is not acceptable in a declarative affirmative sentence (83a), but is licensed by direct negation (83b), questions (83c), and conditional sentences ((83d), examples from Haspelmath, 1997: 34).

- (83) a. *He did **anything** to help her.
 b. He didn’t do **anything** to help her.
 c. Have you heard **anything** new about the ozone hole?
 d. If you tell **anybody**, we’ll punish you.

Some literature observes a strong diachronic relation between indefinite pronouns that occur in negative contexts and negative pronouns that occur in negative polarity contexts. For example, Roberts and Roussou (2003) observe that French negative indefinites, such as *personne*, developed from a plain quantifier meaning ‘a person’ into an NPI meaning ‘anybody’. This change, however, did not stop at this point, and *personne* further developed into a negative indefinite. Jäger (2010) highlights similar changes in the history of German and argues that changes in the reverse direction (from negative indefinite to NPI, from NPI to plain indefinite) are attested as well.

Free choice indefinite pronouns

The last function of indefinite pronouns that Haspelmath mentions is to express free choice (Vendler, 1967; Kadmon & Landman, 1993; Dayal, 1998, 2013; Giannakidou, 2001; Horn, 2000, among others). The most famous example of an indefinite pronoun that expresses a free choice meaning is the English *any*-series (*anyone*, *anybody*, *anywhere*, etc.), as shown in (84). Example (84) expresses indifference through the choice of *anyone* as the referent. The example states that basically anybody in the world would be an appropriate candidate for asking.

(84) You can ask **anyone**.

Many languages have a special series of indefinite pronouns to express the meaning of free choice. For German, this is done by the *irgend-* series, an example can be seen in (85). As the indefinite pronoun *irgendjemanden* here expresses free choice, (85) could for example be used in a situation where the indented location is widely known to locals, and therefore anybody in the respective context would qualify for giving directions.

(85) Du kannst einfach **irgendjemanden** nach dem Weg fragen.
'You can just ask **anyone** for directions.'

While it has been pointed out above that indefinite pronouns can be represented by the existential quantifier, free choice indefinites are represented by the universal quantifier ($\forall x$), which makes them semantically similar to universal quantifiers like *every*. The term 'free choice' was coined by Vendler (1967; for a short overview see Giannakidou, 2011). Free choice items are usually scalar-marked and require exhaustive variation (e.g., Giannakidou, 2001).

This review of free choice indefinite pronouns concludes my summary of Haspelmath's nine different functions that indefinite pronouns fulfil in the languages of the world. For a short overview, see Table 9.

Overall, the work by Haspelmath not only illustrates the versatility of indefinite pronouns and how many functions they cover, but also points towards the observation that studying indefinite pronouns teaches us about the conditions or restrictions of reference in general. However, when it comes to the properties of indefinite pronouns, important dimensions are still missing in the study. For example, the research on indefinite pronouns is restricted

to their behavior within one sentence and not much is being said about their role in discourse. The next section will therefore also consider larger text units and look at the discourse function of indefinite pronouns.

Function	Example
a. specific, known to speaker	<i>I have to go. I'm meeting someone for lunch.</i>
b. specific, unknown to speaker	<i>Someone called. I don't know who.</i>
c. non-specific, irrealis	<i>Visit me sometime!</i>
d. question	<i>Have you heard anything new about the ozon hole?</i>
e. conditional	<i>If you tell anybody, we'll punish you.</i>
h. comparative	<i>This car is more expensive than anything I own.</i>
f. indirect negation	<i>You can't cook without buying anything first.</i>
g. direct negation	<i>Nobody managed to solve the puzzle in time.</i>
i. free choice	<i>You can borrow anything I own.</i>

Table 9: Overview functions for indefinite pronouns by Haspelmath (1997).

3.2.3 The discourse function of indefinite pronouns

Like indefinite noun phrases in general, indefinite pronouns usually serve to introduce a new referent in the discourse. In contrast to full indefinite noun phrases, however, indefinite pronouns usually introduce discourse referents whose identity is unknown or questioned, or entities whose identity is being kept hidden or merely left unspecified (Bhat, 2004).

The discourse role of indefinite pronouns furthermore clearly differs from that of definite pronouns, such as personal or demonstrative pronouns, which pick up already introduced referents. Because of this, indefinite pronouns are associated with higher processing costs than definite pronouns. In a reading time experiment in English, Murphy (1984) compared the processing of a personal pronoun (*it*) with that of the indefinite pronoun *one*. Participants had to read paragraphs like the one in (86) that either contained the indefinite pronoun *one* which introduced a new referent (86a) or the pronoun *it* which referred back to an already established one (86b). Murphy found that establishing a new discourse referent as indicated by the indefinite pronoun elicited longer comprehension (i.e., reading) times than referring to an already existing referent.

(86) Brian and Gordon were housesitting for a professor of theirs. (...) Gordon slipped and hit a rare, wide, stained-glass window.

a. Brian slipped and hit **one** too.

b. Brian slipped and hit **it** too.

(...)

However, not all indefinite pronouns actually introduce discourse referents. As Karttunen (1976) has already noticed, only indefinite NPs that imply the existence of some specific entity actually introduce an individual referent. Whether or not an indefinite NP introduces a discourse referent depends on different aspects such as specificity and sentence operators (for example, negation). A typical test for the introduction of a discourse referent is whether anaphoric uptake with a personal pronoun is possible in the subsequent discourse. For example, in a negative context where the existence of an individual is not implied, as in (87a), the phrase *a man* cannot introduce a discourse referent, and anaphoric uptake in the continuation is therefore infelicitous. In the positive version in (87b), however, the existence of a man is implied, therefore a discourse referent is introduced and anaphoric uptake is possible.

(87) a. Sara didn't see a man. #He had a hat on.

b. Sara saw a man. He had a hat on.

Concerning the question of whether a noun phrase actually introduces a discourse referent, indefinite pronouns behave the same as full indefinite noun phrases. This is illustrated in (88), which shows the same pattern as example (87).

(88) a. Sara didn't see someone. #He had a hat on.

b. Sara saw someone. He had a hat on.

To sum up, in contrast to personal or demonstrative pronouns, indefinite pronouns, if used referentially, introduce new discourse referents into the discourse whose identity is left unspecified. Concerning the question of when they introduce a discourse referent, they behave very similarly to full indefinite noun phrases.

3.3 On the relationship of the pronoun *ein(er)* with other indefinite pronouns

3.3.1 Peculiarities of the German pronoun *ein(er)*

The previous section focused on typical properties of indefinite pronouns. The German indefinite pronoun *ein(er)*, however, which is investigated in this dissertation, is in many ways a rather atypical example of an indefinite pronoun showing a number of peculiarities regarding formal as well as semantic properties. In this section, I will discuss those peculiarities in more detail.

When it comes to formal properties, the pronoun *ein(er)* diverges from other indefinite pronouns in that it is not part of an indefinite pronoun series as we find for example in English with the *some-* (*somebody, something, ...*) or *any-* series (*anybody, anything, ...*). In German, the occurrence of indefinite pronoun series is not equally pronounced as in English. However, as Zifonun (2007) argues, German still differentiates at least four series of indefinite pronouns, as shown in Table 10.

Syntactic category	Conceptual class	<i>Jemand/ etwas</i> series	Interrogative series	<i>Irgend-</i> series	Negative series
only pronoun	person	<i>jemand</i>	<i>wer</i>	<i>irgendwer, irgendjemand</i>	<i>niemand</i>
	non-personal	<i>etwas</i>	<i>was</i>	<i>irgendwas, irgendetwas</i>	<i>nichts</i>
adverb	place		<i>wo</i>		<i>nirgends, nirgendwo</i>
	time	<i>je, jemals</i>			<i>nie</i>
	manner			<i>irgendwie</i>	
dependent pronoun / determiner		<i>ein(er)</i>	<i>welch(er)</i>	<i>irgendein(er), irgendetwelch(er)</i>	<i>kein(er)</i>

Table 10: Indefinite pronoun series in German, (Zifonun, 2007:66).

As the table shows, Zifonun adds *ein(er)* and related forms (e.g., the negative form *kein(er)*, see 2.2.1) in her overview not as an individual series but as part of the four existing ones under the category ‘dependent pronoun/determiner’. As such a category is not part of the original classification by Haspelmath (1997), this seems to be based on a

formal criterion, which is especially obvious for the forms *irgendein(er)* and *welch(er)*, which formally seem to complement the *irgend-* and interrogative series. This is, however, less convincing for the simple form *ein(er)* and the negative form *kein(er)*, which do not seem to fit the formal similarities of their respective series. Second, *ein(er)* and related forms not only are used as context-dependent pronouns and determiners, but, as shown in Chapter 2 of this dissertation and example (88a), also act as independent pronouns, similar to *jemand* or *wer*. Third, the form *welch(er)* seems to have a totally different place in its series than the other forms of *ein(er)*. For example, in the independent interpretation, *ein(er)*, *kein(er)*, and *irgendein(er)* refer to persons and could therefore replace the only pronoun/person expression in Table 10, but *welch(er)* is a plural expression and therefore clearly differs from the respective form *wer* (see also the contrast between (89a) and (89b)). I thus conclude that *ein(er)* and related forms cannot easily be integrated in a German pronoun series.

(89) a. Da kommt **einer / jemand / wer**.

‘There is **someone** coming.’

b. Da kommen **welche**.

‘There are **some people** coming.’

As already seen in Chapter 2, *ein(er)* has a rich inflectional paradigm inflecting for gender and case according to the pattern of German pronominal inflection (Duden, 2016; Eisenberg, 2013), a second property which sets it apart from other (German) indefinite pronouns. Other German indefinite pronouns often occur without an inflectional ending, do not inflect for gender, and show case marking usually only in the accusative, dative, or genitive, but not in the nominative.

As a third formal peculiarity, *ein(er)* can be used either pronominally or adnominally. Recall that in Chapter 2 it was argued that *ein(er)* is a determiner that can be followed either by a covert noun (the pronominal *ein(er)*) or by an overt noun (in case of the German indefinite article, see (90)). Other indefinite pronouns like German *jemand* or English *someone* cannot be used adnominally in the same way as the examples in

(91) show (

(91b) is the German translation of the sentence in

(91a)).

(90) Peter hat gestern einen Mann getroffen.
 ‘Peter met a man yesterday.’

(91) a. *Peter met someone man yesterday.
 b. *Peter hat gestern jemanden Mann getroffen.

Only focusing on formal properties, we thus already see that the pronoun *ein(er)* shows a number of peculiarities. Its most outstanding property, however, which makes it so interesting as a research object, is the number of interpretations the pronoun *ein(er)* can receive. In Chapter 2, I proposed six different interpretations of the indefinite pronoun *ein(er)*: independent, impersonal, elliptic, partitive, lexicalized, and cataphoric, and while none of these discussed interpretations seem to be completely unique to *ein(er)*, them coming together as interpretations of a single expression is what makes *ein(er)* as an indefinite pronoun special. An overview on the different interpretations can be seen in (92).

(92) a. **Independent interpretation**

Gestern hat mich **einer** im Zug angesprochen.
 ‘Yesterday, *someone* spoke to me on the train.’

b. **Impersonal interpretation**

Das Licht blendet **einen**.
 ‘The light dazzles *you*.’

c. **Elliptic interpretation**

Lisa liest ein Buch und Simon liest auch **eines**.
 ‘Lisa is reading a book and Simon is reading *one*, too.’

d. **Partitive interpretation**

Unser Nachbar hat drei Hunde. **Einer** bellt immer, wenn ich ihn sehe.
 ‘Our neighbor has three dogs. *One* always barks when I see it.’

e. **Lexicalized interpretation**

Peter ist draußen um **eine** zu rauchen.
 ‘Peter is outside to smoke *one* (= a cigarette).’

f. **Cataphoric interpretation**

Eines hatte Maria jedoch durchschaut: Peter hatte ein Geheimnis.
 ‘*One thing* Maria had seen through, however: Peter had a secret.’

As a comparison, I will look now at English. In English, most indefinite pronouns only seem to be interpreted independently. Examples of this are the *some-* or *any-* series. For a partitive interpretation, we have to use the pronominal expression *one*, as illustrated in (93) (for more information on indefinite pronouns based on the numeral ‘one’, see the next section).

(93) **One** shouldn’t do that.

Note that this impersonal interpretation of *one* has different requirements than German *ein(er)* as it can only be used in the nominative, while *ein(er)* is used in the accusative or dative. As (94) illustrates, *one* can furthermore be interpreted partitively (94a) or elliptically (94b), but an independent (94c) or cataphoric interpretation (94d) is not possible.

- (94) a. Tim owns three dogs but **one** is clearly my favorite.
 b. Tim owns a dog and I own **one** two.
 c. *Yesterday, I met **one** in town.
 d. ***One** I know: the sun will shine again.

For more comparisons of interpretations of other European indefinite pronouns, see Zifonun (2007), which also shows that a range of six different interpretations is rather unique for a single pronominal expression.

3.3.2 Indefinite pronouns based on the numeral ‘one’

When it comes to its historical source, it is assumed that the indefinite pronoun *ein(er)*, as well as the German indefinite article, developed from the numeral *eins* (‘one’; Lehmann, 2015). *Ein(er)* as a pronoun, however, is already attested in very early stages of German. There are occasional uses of *ein(er)* in Old High German, which can be described as article-like, but can also be interpreted pronominally (Erben, 1950; Fobbe, 2004).

Generally, in other languages, the numeral ‘one’ is usually the source for the grammaticalization of indefinite articles (see, e.g., Givón, 1981), but indefinite pronouns that are based on the numeral ‘one’ are also attested in many languages. In fact, Haspelmath (1997) names the numeral as one of three typical sources of indefinite pronouns in the languages of the world and states that such pronouns are not uncommon in languages where indefinite pronouns are not based on interrogatives. He furthermore argues that

most often such pronouns are used in the sense of ‘somebody’ (i.e., referring to persons with very rare cases, like in Lezgian, where the numeral ‘one’ (*sa*) is also the basis of adverbial indefinite pronouns such as *sana* (‘somewhere’) or *sak’(a)* (‘somehow’).

In the following, I will use English *one* as an example to illustrate how indefinite pronouns based on the numeral ‘one’ in other languages still show a lot of significant differences to the indefinite pronoun *ein(er)*, which is the topic of this dissertation.

In English, there are different elements *one*, and most of the linguistic literature focuses on the ‘real pro-noun’ *one* that replaces NPs (for example, Postal, 1996; Dechaine & Wiltschko, 2002; Llombart Huesca, 2002, Panagiotidis, 2003, Payne et al., 2013, Falco & Zamparelli, 2016), as shown in example (95), where *one* is used after the adjective *green* to replace the noun *shirt* that was mentioned in the previous clause. The use of *one* to replace NPs in English seems, however, to be very language-dependent, as for example German and French use NP-ellipsis in similar contexts.

(95) Peter wears a blue shirt and Paul wears a green **one**.

While it is less focused on in the linguistic literature, English also has an element *one* that replaces DPs, just like the German indefinite pronoun *ein(er)*. An example is shown in (96).

(96) Peter wears a hat and Paul wears **one**, too.

However, this expression also differs in a number of properties from the pronoun *ein(er)*, as first, it does not show the same range of interpretations (we have seen already that the independent interpretation of *ein(er)* has to be translated as *someone*), and second, without further investigation, it does not seem clear if the structural makeup of this element *one* is the same as I argue for *ein(er)*. For the latter, I argue that it is a determiner followed by a covert noun, but as *one* in English is used where other languages use covert nouns, the DP-replacing *one* could be either a determiner followed by a covert noun or a covert determiner followed by the noun *one*. Thus, the case of English *one* illustrates that even if the numeral is a common source for indefinite pronouns in languages of the world, assumptions that are made for *ein(er)* in this dissertation are not necessarily transferrable to other languages.

3.4 Semantic and pragmatic properties of the indefinite pronoun *ein(er)*

3.4.1 Semantic aspects and functions of the pronoun *ein(er)*

In Chapter 2, I proposed six different interpretations of the indefinite pronoun *ein(er)*: independent, impersonal, elliptic, partitive, lexicalized, or cataphoric. I will now use the discussed semantic and discourse properties of indefinite pronouns from section 3.2 to further characterize the six interpretations.

As discussed above, in formal semantics, indefinite pronouns can usually be translated into the existential quantifier. The same is true for most of the interpretations of *ein(er)*. However, for each interpretation, we find additional restrictions (as is usually the case for indefinite pronouns) that set apart different interpretations of *ein(er)*. For example, the independent interpretation of the pronoun *ein(er)* always receives the additional feature [+person]. For other interpretations, the additional information depends on the context (elliptic and partitive), on the construction it occurs in (lexicalized), or on the morphological information (cataphoric). For the partitive interpretation, we need additional restrictions, which could for example be modeled by a domain constrained by the existential quantifier saying that the restrictor has to be discourse-familiar (Brasoveanu & Farkas, 2016).

One of the interpretations of *ein(er)*, however, behaves clearly differently: as the impersonal interpretation usually expresses a generic or universal statement that holds true not only for one individual but for everybody, in a formal representation it has to be modeled by the universal quantifier ($\forall x$) instead of the existential one, with a domain restriction depending on the context. This is not too uncommon for indefinite pronouns; in fact, all indefinite pronouns that fulfill the function of expressing a free choice interpretation have to be modeled in the same way.

Concerning the semantic properties of indefinite pronouns, I have mainly focused on the typological study by Haspelmath (1997), who defines nine different functions of indefinite pronouns. For German, Haspelmath proposes five different indefinite series (*etwas*, *irgend*, *je*, *jeder*, and *n-*) that are distributed over the nine functions, as illustrated in Figure 2. Haspelmath does not specifically discuss the pronoun *ein(er)*, but we have already seen in section 3.3 that the pronoun would be most likely part of the *etwas* series.

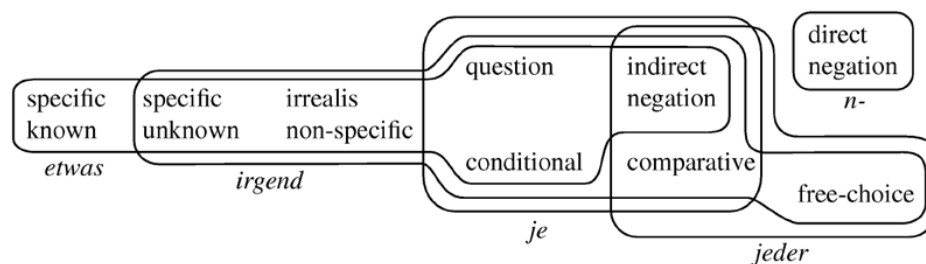


Figure 2: Implicational map for German indefinite series (Haspelmath, 1997: 245).

A very detailed application of Haspelmath's functions of indefinite pronouns for German can be found in the work of Fobbe (2004), both for synchronic data and for the diachronic development of indefinite pronouns in German (for an overview see Table 11). For the indefinite pronoun *ein(er)*, Fobbe's data suggests that in Old High German, it was only used in specific and speaker-known contexts. This is also supported by a study by Donhauser and Petrova (2012), who argue that in Old High German, *ein(er)* had to be used specifically and marked its referent as somehow being important for the upcoming discourse. The function of *ein(er)* then further extended in Middle High German to specific and speaker-unknown contexts as well as to non-specific contexts, such as irrealis, question, and conditional. In Early New High German, *ein(er)* extended even further and is also attested in indirect negative contexts (Fobbe, 2004). Synchronically, *ein(er)* can occur in specific as well as non-specific contexts as well as in questions and conditionals and under indirect negation. This matches the implicational map by Haspelmath (see Figure 2 above).

		Specific known	Specific unknown	Irrealis non-specific	question	conditional	Indirect negation
<i>ein(er)</i>	Ahd	✓					
	Mhd	✓	✓	✓	✓	✓	
	Fnhd	✓	✓	✓	✓	✓	✓
	Nhd	✓	✓	✓	✓	✓	✓

Table 11: Diachronic overview functions of German pronominal *ein(er)* by Fobbe (2004).

However, Fobbe does not further address the fact that the indefinite pronoun *ein(er)* can be interpreted in different ways. It is thus not clear whether her assumptions hold true for each of the proposed six interpretations. This will therefore now be further elaborated on. I base my analysis on a number of examples I formulate for each interpretation and form of *ein(er)*. In this section, for the sake of clarity, I will only review the most important

observations, but the full paradigm of examples (each interpretation in each function) can be found in Appendix A.

Indeed, for all interpretations of *ein(er)* it holds true that they cannot express the comparative, direct negation, or free choice functions.¹⁰ This is because in a negative context the form *kein(er)* has to be used, while free choice in German has to be expressed by the form *irgendein(er)* (Kratzer & Shimoyama, 2002). *Kein(er)* and *irgendein(er)* do not show the same six different interpretations as *ein(er)*: they can only be interpreted independently, elliptically, or partitively (for more details, see examples in Appendix A). *Kein(er)* can furthermore sometimes occur in the same lexicalized constructions as *ein(er)*, but it is much more restricted here, as example (97) shows. While the use of *keiner* seems to be fine if *eine runterhauen* (roughly ‘hit someone in the face’) is used negatively like in (97a), the same is not possible in (97b), where *einen trinken* (‘go for drinks’) is used negatively.

- (97) a. Rainer hat seine Wut besser im Griff. Heute hat er Paul **keine** runtergehauen.
 ‘Rainer has his anger better under control. Today, he hit Paul **none**.’
- b. #Paul und Rainer sind gestern zuhause geblieben und waren **keinen** trinken.
 ‘Yesterday, Paul and Rainer stayed at home and went for **no drinks**.’

When it comes to the remaining six functions, which Fobbe argues are possible for the pronoun *ein(er)*, different interpretations behave quite heterogeneously, as I will show in the following.

As has often been mentioned, the independent interpretation behaves very similarly to the German pronoun *jemand*, which is also the subject of Fobbe’s investigation. We can therefore assume that this interpretation should also be covered by her analysis. While, indeed, the independent *ein(er)* is possible in a specific unknown or irrealis context, in questions and conditionals, and under indirect negation, the situation seems less clear in the case of a specific, speaker-known context. In such a context, the speaker knows the intended referent but decides to not give the hearer more information about him or her, even though the use of an indefinite pronoun is much less informative than the use of a full noun phrase. A situation like this could occur for example if the speaker does not want to reveal the identity of the intended referent or considers it extremely

¹⁰ There seems to be one exception, though: the impersonal interpretation of *ein(er)* can be used under direct negation. For more details, see the discussion below as well as the example in the appendix.

irrelevant in the current situation. An example is illustrated in (98). Though we do not know in the example why speaker B decides to use an indefinite pronoun, she has to know the intended referent as the example implies that she met him for lunch. Now, while the use of the pronoun *jemand* is fine in such a context as that shown in (98a), the use of *ein(er)* seems impossible or is at least extremely marked.

- (98) A: Warum warst du gestern nicht in der Mensa?
 a. B: Gestern hat mich **jemand** zum Mittagessen eingeladen.
 b. B: ?Gestern hat mich **einer** zum Mittagessen eingeladen.
 ‘A: *Why weren't you in the cafeteria yesterday?*
 B: *Yesterday, someone invited me for lunch.* ‘

Another example of this type of context is illustrated below in (99), where the speaker wants to introduce someone to the hearer. The speaker therefore has to know the intended referent of the indefinite pronoun, but a pronoun can be used because the identity is irrelevant as it will be revealed in the subsequent interaction. Again, we find that in German, the pronoun *jemand* is possible (99a), while the use of *ein(er)* seems infelicitous (99b).

- (99) a. Ich möchte dir **jemanden** vorstellen.
 b. #Ich möchte dir **einen** vorstellen.
 ‘*I want to introduce you to someone.*’

The discussed examples point to the notion that the use of an indefinite pronoun *ein(er)* is bad in a context where it is obvious that the speaker knows the intended referent, while the use of the pronoun *jemand*, which usually can replace the independent interpretation of *ein(er)*, seems fine. One explanation could be that *jemand* contains more conceptual material. For example, Roehrs and Saab (2016) argues that *jemand* originated as the complex (bi-morphemic) element *ioman* ‘somebody’ in Old High German, consisting of the proclitic adverb *io* ‘ever’ and a noun meaning ‘man’. *Jemand* then ended up in Modern German as a mono-morphemic word, but its origin still influences the types and morphology of its dependents. For example, *jemand* cannot be used adnominally (Roehrs & Saab, 2016). Now, there are two possible reasons why *jemand* is better than *ein(er)* in specific, speaker-known contexts, given that *jemand* contains more conceptual material. First of all, Fodor and Sag (1982) argue that the more descriptive content a noun phrase has, the more likely it is to have a specific interpretation. Second, it is quite marked to use an indefinite pronoun in a specific, speaker-known context, as the pronoun provides little

help for the hearer to identify the intended referent even though the speaker could give more information. This therefore should only occur if the speaker for some reason explicitly decides to not give any more information about the intended referent (for example because the speaker wants to keep the referent's identity from the hearer). *Jemand* is better in such a context because, based on its origin, which is still a bit transparent, it can more clearly express that the speaker is referring to an unspecified person.

The impersonal interpretation of *ein(er)* does not refer to an individual referent but rather expresses universal or generic statements. Therefore, it is not allowed in specific contexts, in which we would rather get an independent interpretation. It is however allowed in the described unspecific functions.

Nearly the opposite can be said about the cataphoric interpretation of the indefinite pronoun *ein(er)*. This interpretation only occurs in a specific function. As it further has to be rementioned and specified, the speaker has to know the intended referent, so the only function that the cataphoric interpretation allows for is the specific, speaker-known one. This is illustrated in (100). If the speaker knows the intended referent of *eines* and mentions it, the discourse is felicitous (see (100a)), but if the speaker does not know the intended referent, the use of the pronoun *ein(er)* is not possible (see (100b)).

- (100) a. **Eines** hatte Maria jedoch durchschaut: Peter hatte ein Geheimnis.
 ‘*One thing* Maria had seen through, however: Peter had a secret.’
- b. #**Eines** hatte Maria jedoch durchschaut: Ich weiß aber nicht was.
 ‘*One thing* Maria had seen through, however: But I don't know what.’

The three independent interpretations of *ein(er)* I have described so far (i.e., the interpretations that are based on an empty noun) are therefore distributed over the implicational map of indefinite pronouns as illustrated in Figure 3.

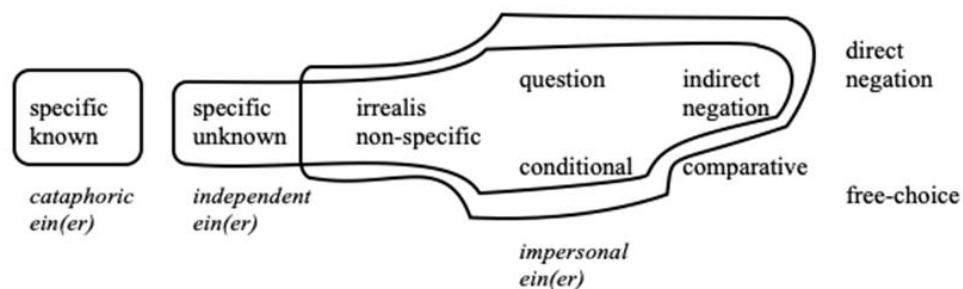


Figure 3: Implicational map for independent interpretations of *ein(er)*.

The partitive and elliptic interpretations of *ein(er)* behave exactly the same, as both can be specific, speaker-known and specific, speaker-unknown as well as unspecific for irrealis, questions, conditionals, or under indirect negation. This behavior is thus in line with the assumptions by Fobbe. (101) shows some of these contexts, with the elliptic interpretation of the pronoun used specific, speaker known (101a) and under indirect negation (101b) and the partitive interpretation used specific, speaker-unknown (101c) and in a question (101d).

- (101) a. Weißt du was **ein Professor** so mag? Ich treffe **einen** zum Mittagessen.
*‘Do you know what **a professor** likes? I’m meeting **one** for lunch.’*
- b. Gestern habe ich **einen Professor** kennengelernt. Man kann kaum über den Campus gehen ohne **einem** zu begegnen.
*‘Yesterday, I met **a professor**. You can barely walk around campus without meeting **one**.’*
- c. Peter hat gestern **drei Professorinnen** kennengelernt. Heute trifft er **eine** zum Mittagessen. Ich weiß aber nicht welche.
*‘Yesterday Peter met **three professors**. Today, he is meeting **one** for lunch. I don’t know which one.’*
- d. Da vorne stehen **drei Professorinnen**. Kennst du **eine**?
*‘There are **three professors** in front of you. Do you know **one**?’*

The lexicalized interpretation of the pronoun *ein(er)* is itself quite restricted as it can only occur in fixed constructions. However, it can occur in the different unspecific contexts, such as irrealis, questions, conditionals, (as illustrated in (102a)) and under indirect negation. In a positive declarative sentence, the pronoun *ein(er)* that is interpreted lexicalizedly can only be used non-specifically. This is illustrated in (102b), where the anaphoric pickup illustrates that the speaker intended a specific referent and the continuation sentence is therefore infelicitous.

- (102) a. Hätte er **eine** geraucht, wäre ich sauer gewesen.
*‘If he had smoked **one**, I would have been pissed.’*
- b. Peter hat draußen **eine** geraucht. #Eigentlich wollte ich **sie** rauchen.
*‘Peter smoked **one** outside. Actually, I wanted to smoke **it**.’*

If we combine this information, we can again use the implicational map from Haspelmath (1997) for illustration. The three context-dependent interpretations of the German indefinite pronoun *ein(er)* are then distributed over the implicational map as shown in Figure 4.

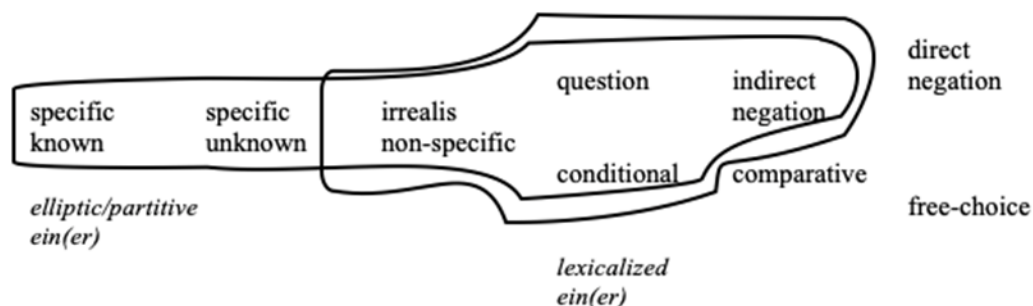


Figure 4: Implicational map for context-dependent interpretations of *ein(er)*.

Overall, this shows that the generalization made by Fobbe (2004) holds true only for the elliptic and partitive interpretations of *ein(er)*, which are possible in all six of the discussed contexts. In contrast, the independent interpretation is not acceptable if the intended referent is specific and speaker-known, and other interpretations are even more restricted, with the impersonal and lexicalized interpretations of *ein(er)* excluding the specific function and the cataphoric one being restricted solely to specific, speaker-known contexts.

3.4.2 The discourse function of the indefinite pronoun *ein(er)*

Turning to the discourse function of the German indefinite pronoun *ein(er)*, we have seen above that indefinite pronouns can introduce new referents into the discourse. However, like all indefinite noun phrases, they have to be used referentially. This is also true for the different interpretations of *ein(er)*, but we will see in this section that their discourse functions clearly differ from each other.

The independent, elliptic, and partitive interpretations of *ein(er)* behave most similarly to regular indefinite noun phrases; if used specifically or in a declarative sentence, *ein(er)* introduces a new discourse referent. This is illustrated below, where the referent that is introduced is then picked up by a subsequent anaphoric pronoun, for the independent interpretation in (103), the elliptic in (104), and the partitive in (105). Note that while the referent in the partitive interpretation has not been mentioned before, it is in a subset related to an already introduced referent and can thus be counted as weakly familiar.

- (103) Gestern hat **einer** angerufen. **Er** hat aber direkt wieder aufgelegt.
 ‘Yesterday *someone* called. But *he* hung up immediately.’

(104) Sandra hat ein Fahrrad und Peter hat jetzt auch **eines**. **Es** ist blau.

*‘Sandra has a bicycle and Peter has now **one** too. **It** is blue.’*

(105) Sandra hat drei Fahrräder und Peter hat sich **eines** geliehen. **Es** ist blau.

*‘Sandra has three bicycles and Peter has borrowed **one**. **It** is blue.’*

The impersonal interpretation of *ein(er)* behaves differently than other indefinite pronouns when it comes to discourse properties. As already described above, *man* and the impersonal *ein(er)* do not introduce a discourse referent, as they refer to a demoted agent or make a generic statement and are therefore not referential. In the subsequent discourse, anaphoric uptake is however also possible, not with personal or demonstrative pronouns, but only with *man* or *ein(er)* depending on which case is used. This is illustrated in example (106).

(106) Das ärgert **einen**_i und **man**_i bemüht sich nicht mehr.

*‘This annoys **you**_i, and **you**_i stop trying.’*

In the lexicalized interpretation, the interpretation of *ein(er)* is part of the interpretation of the whole construction and is not referential itself. Therefore, it does not seem to introduce a new referent into the discourse in this interpretation. This is shown in (107), where anaphoric pickup with a personal pronoun in the subsequent discourse is bad.

(107) a. Er hat ihm **eine** runtergehauen. #**Sie** hat weh getan.

*‘He smacked him **one**. **It** hurt.’*

b. #Er steht draußen und raucht **eine**. #Dann wirft er **sie** in die Mülltonne.

*‘He stands outside smoking **one**. Then he throws **it** in the trash bin.’*

For the cataphoric interpretation of *ein(er)*, subsequent anaphoric pickup is not only possible but obligatory. Therefore, this interpretation always introduces a new referent in the discourse. Furthermore, the referent that is introduced has to be mentioned more explicitly; a pronoun is not enough. However, anaphoric pickup with a personal pronoun is possible if the referent is then mentioned subsequently. This is illustrated in (108), where *eines* refers to the proposition *Du hast mich angelogen* (‘You lied to me’) and is first picked up by the anaphoric pronoun *es*.

(108) **Eines** weiß ich und **es** ärgert mich: Du hast mich angelogen.

*‘**One thing** I know and **it** annoys me: you lied to me.’*

To sum up, depending on the context, most interpretations of *ein(er)* can introduce new referents into the discourse. The lexicalized and impersonal interpretations, however, are exceptions where anaphoric uptake in the subsequent discourse is only possible with another impersonal pronoun.

3.5 Summary

The goal of this chapter has been to give background information on the semantics and pragmatics of indefinite pronouns and to link this information to the German indefinite pronoun *ein(er)*.

After the introduction, section 3.2 reviewed the linguistic literature on indefinite pronouns. It showed that the term ‘indefinite pronoun’ is often used as a ‘wastebasket category’ subsuming numerous pronominal forms with different properties. For this dissertation, I define indefinite pronouns as those pronominal expressions that can be used to introduce new referents in the discourse. As the semantic properties of indefinite pronouns are very versatile - they can stand in a number of contexts and fulfil many different functions - I showed, based on the work of Haspelmath (1997), how indefinite pronouns can express specificity, knowledge of the speaker, negation, negative polarity, or free choice. Looking at their discourse properties, the chapter argued that indefinite pronouns differ from other pronouns in that they can introduce new discourse referents instead of referring back to already introduced ones.

In section 3.3, I tried to clarify the relationship of the German indefinite pronoun *ein(er)*, which is the topic of this dissertation, with other indefinite pronouns. It showed that *ein(er)* combines a number of peculiarities, including some formal properties, most notably the observation made in Chapter 2 that *ein(er)* can be interpreted in six different ways. I argued that while none of these interpretations are exclusive to *ein(er)*, all six interpretations being available for a single pronominal expression makes *ein(er)* stand out from other indefinite pronouns. The section also looked at pronouns based on the numeral ‘one’ in different languages and concluded that while the numeral is a typical source for other indefinite pronouns in other languages as well, the peculiarities described for *ein(er)* are properties of the German pronoun and cannot be transferred to other languages in the same way.

Section 3.4 applied the obtained insights on the semantics and pragmatics of indefinite pronouns to the German indefinite pronoun *ein(er)*. Both for semantic as well as for

discourse properties, we saw that the different interpretations of *ein(er)* behaved quite heterogeneously. For example, for the elliptic and partitive interpretations, contexts are not restricted at all, while the cataphoric interpretation can only be used in speaker-known contexts. Similarly, the impersonal interpretation does not introduce a discourse referent, while for cataphoric interpretation, anaphoric uptake is obligatory. This strengthens the view that these interpretations should be held apart.

Chapters 2 and 3 of this dissertation looked at *ein(er)* as an indefinite pronoun. Having first described it and its interpretations in detail, as well as looking at indefinite pronouns more generally, in the following chapters I will now focus on the anaphoric interpretations. For anaphoric interpretations, I distinguished the elliptic from the partitive interpretation. While so far we have seen a lot of similarities in the properties of these interpretations, the next chapter will argue in more detail why these two interpretations should be held apart, followed by some experimental studies on the interpretation of *ein(er)* in discourse.

4 Anaphoric interpretations of the indefinite pronoun *ein(er)* and other indefinite bare determiners

4.1 Introduction

To ensure successful communication, speakers aim at making a text coherent. One important cohesive means to achieve this goal and to establish links in discourse is the use of pronominal expressions. While personal and demonstrative pronouns as anaphoric devices have been in focus in linguistic research for quite a while, this dissertation seeks to investigate the role of indefinite pronouns in discourse. Focusing on the German pronoun *ein(er)*, which shows anaphoric interpretations, it aims to investigate how indefinite pronouns take part in discourse linking. Note that the term ‘anaphoric’ is here understood in a broad sense as ‘referring to elements in the previous text’.

More specifically, this chapter deals with the elliptic (109a) and partitive interpretations (109b) of the German indefinite pronoun *ein(er)*. In both (109a) and (109b), the interpretation of the pronoun in the second sentence depends on an antecedent in the previous discourse; *eine* in (109a) refers to a magazine, while *einer* in (109b) refers to one of the dogs introduced in the first sentence. In this chapter, I lay out and defend my hypothesis that the two anaphoric interpretations of *ein(er)* have to be clearly distinguished as they result from two different underlying structures. I assume that the elliptic interpretation results from the phonological deletion of a noun phrase (i.e., NP-ellipsis) while the partitive interpretation results from a partitive null proform that replaces a partitive phrase.

(109) a. Lisa liest eine Zeitschrift. Simon liest auch **eine**.

*‘Lisa is reading a magazine. Simon is reading **one**, too.’*

b. Unser Nachbar hat drei Hunde. **Einer** bellt immer laut, wenn ich ihn sehe.

*‘Our neighbor has three dogs. **One** always barks loudly when I see it.’*

The chapter links the assumptions made for the indefinite pronoun *ein(er)* to bare indefinite determiners (e.g., *some* or *many*) and numerals (*two*, *four*, etc.) in general. As the pronoun *ein(er)* has been analyzed as a determiner followed by a covert noun (see Chapter 2) and other bare determiners show a similar anaphoric ambiguity, in this chapter, I will treat them alike. In the linguistic literature, cases of bare determiners are usually analyzed

under the topic of NP-ellipsis without distinguishing between cases that show partitivity and cases that do not (for example, Lobeck, 1995; Bernstein, 1993; Panagiotidis, 2003; Corver & van Koppen, 2011), while the literature on partitivity is mostly concerned with full partitive phrases (for example, Hoeksema, 1996; Barker, 1998; Ionin et al., 2006; Falco & Zamparelli, 2018) without discussing the case of covert partitivity (see, however, Falco & Zamparelli, ms). The goal of this chapter is to argue against any uniform analysis and propose that, as they are based on two different structures, partitive and elliptic interpretations of bare determiners have to be distinguished.

The remainder of the chapter is structured as follows: I will first present my proposal that distinguishes two anaphoric interpretations of indefinite bare determiners, present evidence from the indefinite pronoun *ein(er)* to support the proposal, and discuss some challenges and open questions of the approach. Section 4.3 will then focus on the assumption that bare determiners always involve noun phrase ellipsis. I will give a short summary of this noun phrase ellipsis approach and discuss problems with the assumption. Section 4.4 will focus on the partitive approach formulated by Gagnon (2013), who proposes that bare determiners should always be analyzed as involving ellipsis of a partitive phrase. Again, I will first give an overview and then discuss problems with the approach. The chapter will end with a short summary.

4.2 The proposal: Distinguishing two interpretations of indefinite anaphoric determiners

4.2.1 Summary

In this chapter, I want to argue that there are two distinct interpretations of indefinite anaphoric determiners in general and the German pronoun *ein(er)* in particular. Crucially, I argue that these interpretations not only can be differentiated due to their semantic properties, but are also based on two different structures that are not expressed overtly.

While the research object of this dissertation is the indefinite pronoun *ein(er)*, in this chapter, I extend my claims to indefinite bare determiners in general. This is done on the basis of two observations: first, subsuming under the term ‘pronoun’ all functional expressions that replace full DPs in a sentence, I have argued in Chapter 2 that the pronominal form *ein(er)* is actually also a determiner followed by a covert noun, and second,

other indefinite bare determiners show a similar ambiguity for anaphoric interpretations, as shown for *ein(er)* (see the contrast below in (111)). Note however that definite bare determiners, if used anaphorically, always receive a coreferential interpretation, as illustrated in (110), for the determiner *both*. They are therefore not part of the considerations in this chapter.

(110) Our neighbor has two dogs. **Both** always bark loudly when I see them.

Coming back to my proposal, for indefinite anaphoric determiners, I distinguish between an elliptic interpretation as illustrated in (111a) and a partitive interpretation as illustrated in (111b) for the English quantifier *some*.

- (111) a. Peter doesn't want to watch horror movies. **Some** are just too much for him.
 b. Peter watched twenty horror movies last year. **Some** were just too much for him.

In the elliptic interpretation, the interpretation of *some* is dependent on a noun phrase antecedent in the previous text – here the noun phrase *horror movies*. The bare determiner and its antecedent share the same nominal characteristic, or in other words refer to an entity of the same kind. However (given that they are actually referential), bare determiners introduce discourse referents that are otherwise discourse-new. In the partitive interpretation in (111b), *some* is dependent on a full DP that refers to a group or set – here the antecedent is *twenty horror movies*. Determiner and antecedent again share the same nominal characteristic (i.e., refer to entities of the same kind), but also have a special semantic relationship in that *some* refers to a subset of its antecedent. Its referent is therefore neither coreferential to an antecedent nor discourse-new, but discourse-linked or weakly familiar.

The partitive interpretation of an anaphoric determiner only arises if there is a set or a group that is already present in the linguistic context or the immediate surrounding with the latter usually requiring some deictic support (for example a pointing gesture). If a set or group is available as an antecedent, a partitive interpretation is however not always required, as example (112) shows. Here, the semantics of the two clauses ensures that *some* is interpreted elliptically and does not refer to a subset of the twenty students introduced in the first clause but to a different set of students, as a partitive interpretation would be contradictory in this example.

(112) 20 students were sitting in the classroom and **some** were still at home.

I want to argue that the differentiation between an elliptic and a partitive interpretation is valid for most English and German indefinite determiners (and probably for many other languages' as well). There are some exceptions, which will be discussed in section 4.2.4, but crucially the differentiation is also valid for the German indefinite pronoun *ein(er)*. This is illustrated in (113), where *einer* in (113a) is interpreted elliptically, referring back to the antecedent NP *Horrorfilme* ('horror movies'), and in (113b) is interpreted as partitively, with *ein(er)* referring to one of the twenty horror movies introduced in the first sentence.

- (113) a. Peter schaut keine Horrorfilme. Letztes Jahr hat ihn **einer** total verstört.
*'Peter doesn't want to watch horror movies. Last year, **one** totally distressed him.'*
- b. Peter hat im letzten Jahr zwanzig Horrorfilme geschaut. **Einer** war einfach zu viel für ihn.
*'Peter watched twenty horror movies last year. **One** was just too much for him.'*

I propose that the distinction between a partitive and an elliptic interpretation of bare determiners can not only be made based on the described semantic properties, but rather follows from a differentiation in the underlying structure. While for both interpretations, I assume a structure where the determiner is followed by non-pronounced material, I argue that the elliptic interpretation follows from NP-ellipsis, while bare determiners with a partitive interpretation are actually covert partitives. The examples in (113) thus can be matched with the examples in (114) which shows that changing the bare determiner *some* to *some horror movies* in the case of (114a) and *some of the horror movies* in the case of (114b) actually leads to the same semantic properties discussed above, being of the same kind and discourse-new in the case of (114a), which corresponds to the elliptic interpretation, and being of the same kind but standing in a weakly familiar set-subset relation in the case of (114b), illustrating the partitive interpretation.

- (114) a. Peter doesn't want to watch horror movies. **Some horror movies** are just too much for him.
- b. Peter watched 20 horror movies last year. **Some of the horror movies** were just too much for him.

In general, I assume the two structures for indefinite anaphoric determiners that are illustrated in (115). The structure of elliptic interpretations is illustrated in (115a), with a determiner followed by an NP that is elided following the properties of NP-ellipsis. For partitive interpretations, I assume that the structure is based on the canonical overt partitive construction (for example, *one of the boys, many of them*), however the partitive phrase (e.g., *of the boys, of them*) is replaced by a silent partitive proform, as illustrated in (115b). I propose that, similar to pronominal forms like German *davon*, the null proform encodes a partitive relation, and is anaphoric to a non-singular (i.e., plural or mass) referent as antecedent (for a similar account see Falco & Zamparelli, ms).

(115) a. *Elliptic interpretation*

Det NP

b. *Partitive interpretation*

Det \emptyset_{Part}

As noted above, a partitive interpretation of a bare determiner is only possible if a group or set has already been introduced in the discourse. The structure proposed in (115b) can account for this observation as the proposed partitive proform requires a non-singular antecedent.

The proposed structure for bare determiners is also valid for the German pronoun *ein(er)*, as illustrated in (116).

(116) a. *elliptic interpretation*

ein(er) NP

b. *partitive interpretation*

ein(er) \emptyset_{Part}

Lastly, I want to propose that the two different interpretations of *ein(er)* and other bare determiners correspond to two types of discourse linking: I propose, that the elliptic interpretation is the result of a copying process on a textual level, while the partitive interpretation refers to the level of the mental discourse model in that it picks out one element of a group or set that has been introduced as a discourse referent. By introducing new referents, both types of discourse linking can furthermore be differentiated from linking

with definite pronouns which establish a coreferential relationship on the level of the mental discourse model. A similar distinction was originally proposed by Hankamer and Sag (1976) and modified in Sag and Hankamer (1984): deep anaphora (which would correspond to the partitive interpretation) and surface anaphora (which would correspond to the elliptic interpretation).

In their paper from 1976, Hankamer and Sag draw a distinction between so-called deep anaphora, which allows pragmatic control (i.e., can be used deictically), and surface anaphora, which requires parallelism of the syntactic form and exhibits the ‘missing antecedent’ phenomenon (Grinder & Postal, 1971; Bresnan, 1971; see the discussion in section 4.2.3). Hankamer and Sag argue that for deep anaphora, the anaphoric relation is determined at a presyntactic level and involves substitution of a semantic unit that appears elsewhere in the discourse or context, while surface anaphora behaves as a purely superficial syntactic process. These assumptions have since been modified in Sag and Hankamer (1984), where they suggest that the interpretation of deep anaphora is determined by reference to the interpretation of its antecedent (i.e., by reference to an object in the discourse model, see remarks below), while the interpretation of surface anaphora is determined by reference to a linguistic or textual representation associated with the antecedent. Following these new assumptions, they termed the two types of discourse linking as model-interpretive anaphora instead of deep anaphora and as ellipsis instead of surface anaphora.

These updated assumptions built on an influential idea in the research on language comprehension, namely, that comprehension of discourse involves the construction of a mental models (see, for example Johnson-Laird, 1980; Kintsch, 1998; Garnham, 1999; for a more recent application and overview, see Zwaan, 2016). The basic idea here is that comprehension of incoming discourse involves the construction of a mental representation of the state of affairs denoted by the text rather than only a mental representation of the text itself (Zwaan, 2016:1028).

Similarly, I assume that there are two different kinds of anaphora. One class of anaphoric expressions refers to linguistic expressions, i.e. to syntactically matching linguistic material, while another class is resolved by reference to the interpretation of linguistic expressions or, in other words, referents in the mental discourse model. The latter would include expressions such as personal or demonstrative pronouns while the former includes phenomena such as ellipsis or destressing.

I propose that the elliptic interpretation of anaphoric bare determiners refers on a textual level to a linguistic expression and thus behaves similar to expressions originally classified as surface anaphora while the partitive interpretation refers on the level of the discourse model and behaves similar to deep or model-interpretive anaphora. More evidence for this assumption can be found in section 4.2.2, and it is furthermore experimentally supported in Chapter 6.

To sum up, I have proposed that there are two different anaphoric interpretations of bare determiners in general and the German indefinite pronoun *ein(er)* in particular. First, they can be interpreted elliptically, an interpretation that is based on the ellipsis of a noun phrase refers on a textual level. Second, they can be interpreted partitively, an interpretation where the determiner is followed by a silent partitive proform and refers to the interpretation of linguistic material. This proposal has the benefit that it can account for semantic as well as discourse-related differences between the interpretations and can give a straightforward explanation for the observation that bare determiners often refer to a subset of an already-introduced set. In the following, I will give further evidence for this proposal, looking at the behavior of the German indefinite pronoun *ein(er)*.

4.2.2 Evidence from the pronoun *ein(er)*

In the following, I will use the German indefinite pronoun *ein(er)* as an example to support my proposal that there are two different interpretations for anaphoric bare determiners – an elliptic and a partitive one. I will look at agreement patterns for hybrid nouns and compounds, the missing antecedent phenomenon, and pronominal antecedents.

Hybrid nouns

First, I will look at agreement patterns for cases where the indefinite pronoun *ein(er)* is used partitively or elliptically. Two cases show interesting properties in this respect. First, let us look at gender mismatch or hybrid nouns (Corbett, 1991) in German. Hybrid nouns, of which the most outstanding in German is *Mädchen* ('girl'), show a mismatch between their semantic (*Mädchen*/girl is semantically female) and their grammatical gender (*Mädchen* is grammatically neuter, see also Barber et al., 2004). Now, if we look at examples where the pronoun *ein(er)* is used context-dependently with a hybrid noun as antecedent, we see that the partitive and the elliptic interpretations seem to behave differently. If used elliptically, as shown in (117a), *ein(er)* should be used in the neutral form (*eines*) (i.e.,

with the corresponding grammatical gender). Using the female version *eine*, as shown in (117b), is much less acceptable. Interestingly, we do not see the same effect for the partitive interpretation of *ein(er)*. As (118) shows, *ein(er)* can be used in either the neutral or female forms.

(117) a. Peter hat gestern in der Stadt ein Mädchen_{neut} kennengelernt. Heute hat Sandra **eines**_{neut} in der Cafeteria getroffen.

b. #Peter hat gestern in der Stadt ein Mädchen_{neut} kennengelernt. Heute hat Sandra **eine**_{fem} in der Cafeteria getroffen.

*'Peter met a girl in town yesterday. Sandra met **one** today in the cafeteria.'*

(118) a. Peter hat gestern in der Stadt drei Mädchen_{neut} kennengelernt. Zufällig hat Sandra **eines**_{neut} in der Cafeteria wiedertreffen.

b. Peter hat gestern in der Stadt drei Mädchen_{neut} kennengelernt. Zufällig hat Sandra **eine**_{fem} in der Cafeteria wiedertreffen.

*'Peter met three girls in town yesterday. By chance, Sandra met **one** again in the cafeteria.'*

That the distinction between partitive and elliptic interpretations is actually reflected in agreement patterns not only supports the view that we deal with two different interpretations; it furthermore gives support to the assumption that anaphoric reference is made on two different linguistic levels. I have stated above that the elliptical interpretation needs a syntactically matching linguistic antecedent and therefore only allows the version where the grammatical gender is matching. The partitive interpretation on the other hand refers to the discourse model, and therefore – while the version with matching grammatical gender is of course still possible – also allows the version with matching semantic gender.

This is also shown in example (199), which is taken from a German children's song. Here, the pronoun *eins* refers as a partitive to the phrase *all my pigeons*, but while *pigeons* in German has the grammatical gender female, the pronoun is used in the neutral gender. This can be explained by the account proposed in this chapter. The pronoun *eins* refers to an animal (i.e., its semantic gender is neutral); only the grammatical gender is female. As we deal with a partitive interpretation, using the semantic gender is allowed as well.¹¹

¹¹ Note however that, especially for inanimates, it is still preferable to use the version of the pronoun that matches the grammatical gender of the antecedent in the partitive interpretation as well.

- (119) Alle meine Tauben_{fem} gurren auf dem Dach. Fliegt **eins**_{neut} in die Lüfte, fliegen alle nach.
'All my pigeons are cooing on the roof. If one is flying in the air, all are following.'

Compound nouns

A similar pattern can be observed for compound nouns. In German, two nouns can combine to become a compound noun. For NP-ellipsis (i.e., the elliptic interpretation of *ein(er)*), it is then only possible to target the whole compound, not individual parts (see (120)).

- (120) a. Auf dem Tisch liegt eine Kuchengabel_{fem} und Peter versucht seine Suppe mit **einer**_{fem} (=Kuchengabel/*=Gabel) zu essen.
'On the table, there is a cake fork and Peter tried to eat soup with one (=cake fork/=fork).'*
- b. Auf dem Tisch liegt eine Kuchengabel_{fem}. *Gestern habe ich **einen**_{masc} (=Kuchen) gebacken.
*'On the table, there is a cake fork. *Yesterday, I baked one (one=cake).'*

In (120a), *ein(er)* is used with the grammatical gender female and thus in principle matches either the whole compound or the second nominal *Gabel*, as both are female. However, it can only refer back to the whole compound. In (120b), *ein(er)* is used in the male version, which matches the grammatical gender of *Kuchen* ('cake'), the first nominal. The elliptical version of *ein(er)* is however not possible, as it cannot refer to a part of the compound.

However, if the compound introduces a group, as shown in (121), the use of an indefinite pronoun *ein(er)* becomes possible in a partitive interpretation. So again, the elliptic and partitive interpretations of the pronoun show different behavior. In (121), the compound noun *Entenfamilie* ('duck family') introduces a group, and as the partitive interpretation acts on the level of the discourse model, *ein(er)* can refer as a partitive to an element of that group.

- (121) Eine Entenfamilie überquerte die Straße. **Eines**_{neut}/**Eine**_{fem} (=eine Ente) humpelte ein bisschen.
'A duck family was crossing the street. One (=a duck) was limping a bit.'

An elliptic interpretation in the same example is not possible, as the linguistic antecedent that this interpretation requires is not available. Example (122), for semantic reasons, only

allows for an elliptic interpretation. Here, then, *eine* can only refer to the whole compound noun, (i.e., a whole duck family, not a single duck).

- (122) Eine Entenfamilie überquerte die Straße. **Eine** (= *Ente/=Entenfamilie) war noch im Teich.
 ‘A duck family was crossing the street. **One** (= *duck/=duck family) was still in the pond.’

To sum up, agreement patterns give further support to the notion that the partitive and elliptic interpretations of *ein(er)* need to be distinguished. The examples have shown that an elliptic interpretation refers to syntactically matching linguistic material, while the partitive interpretation refers to referents in the discourse model.

Missing antecedents

Hankamer and Sag (1976) argue that another test case for the differentiation between surface and deep anaphora is the missing antecedent phenomenon (Grinder & Postal, 1971; Bresnan, 1971). As (123), from Grinder and Postal (1971:276), shows, surface anaphora like VP-ellipsis allows for subsequent anaphoric chains even if an antecedent is not expressed overtly. In (123), the pronoun *she* can refer back to Bill’s wife, even though this referent was not explicitly mentioned. This is taken as an argument to assume that surface anaphora involves a syntactic deletion rule and that structures like (123a) are closely related to structures like (123b) where the antecedent is expressed overtly.

- (123) a. Harry doesn’t have a wife but Bill does and she is a nag. [she = Bill’s wife]
 b. Harry doesn’t have a wife but Bill does have a wife and she is a nag.

However, missing antecedents are not allowed for deep anaphora. Bresnan (1971) shows that a similar argument cannot be constructed for *do it* anaphora. This is illustrated in (124), from Bresnan (1971:291).

- (124) *Jack didn’t cut Betty with a knife. Bill did it, and it was rusty. [it = the knife Bill cut Betty with]

The proposal presented above would predict that the elliptic interpretation of the German indefinite pronoun *ein(er)* would allow for missing antecedents, while the partitive interpretation would not. In fact, this prediction is borne out, as the following example (125) illustrates.

- (125) a. Peter hat einen Pullover mit Pailletten für die anstehenden Weihnachtstage. Sandra hat auch **einen** gekauft und sie glitzern wundervoll. [sie = Pailletten auf Sandras Pullover]

*'Peter has a sweater with sequins for the upcoming Christmas days. Sandra bought **one** too and they sparkle beautifully.'* [they = sequins on Sandra's sweater.]

- b. Peter hat drei Pullover mit Pailletten für die anstehenden Weihnachtstage. ?Sandra hat **einen** ausgeliehen und sie glitzern wundervoll [sie = Pailletten auf Sandras geliehenem Pullover]

*'Peter has three sweaters with sequins for the upcoming Christmas days. Sandra borrowed **one** and they sparkle beautifully.'* [they = sequins on Sandra's borrowed sweater.]

(125a) illustrates the case of the elliptic interpretation of *ein(er)*. Here, *einen* in the third sentence refers back to the antecedent *Pullover mit Pailletten* ('sweater with sequins'), and the pronoun *sie* ('they') can therefore pick up the sequins from Sandra's new sweater, even though they are not expressed explicitly. In (125b), *einen* in the third sentence is used partitively. Now, the pronoun *sie* ('they') in the next clause is not able to refer to a missing antecedent. Note however that this difference is quite subtle and would probably need to be tested experimentally. A problem here is that a partitive interpretation is never available if the antecedent is introduced under negation (as in the original examples discussed above) and therefore is not introduced as a referent. Nonetheless, I still conclude that the missing antecedent phenomenon gives further support for a distinction between elliptic and partitive *ein(er)*.

Pronominal antecedents

Fourth, the pronoun *ein(er)* is possible with a plural pronoun or a collective noun phrase as an antecedent that does not provide a nominal – but only if it is interpreted partitively. This is shown in example (126), where *eine* in the last sentence refers to one of the group that was introduced in the first sentence, consisting of Sandra, Petra, and Melissa.

- (126) Gestern habe ich mich mit Sandra, Petra und Melissa getroffen. Wir waren in einer Bar und haben den ganzen Abend gequatscht. Ich kenne **die drei/sie** ja schon ewig. **Eine** kenne ich sogar schon seit dem Kindergarten.

*'Yesterday, I met with Sandra, Petra and Melissa. We were in a bar and chatted the whole evening. I have known **the three/them** forever. **One**, I have even known since kindergarten.'*

While *eine* is used anaphorically in the example, there is actually no noun phrase it could link to, as the referents in the group are only introduced by proper names. Also, the

coordination *Sandra, Petra and Melissa* as antecedent is highly unlikely, as first, they are very far away from the pronoun, and second, partitives in general disfavor conjunctions of definites as antecedents (see Falco & Zamparelli, ms.). Instead, *eine* takes the plural pronoun *sie* ('them') or the collective definite noun phrase *die drei* ('the three') as antecedent. However, the antecedent does not contain a nominal and therefore an elliptic interpretation is not possible. This is shown in (127), where from a semantic view it seems plausible that *eine* refers to another long-term friend, but the use of the pronoun is ungrammatical in this context.

- (127) Gestern habe ich mich mit Sandra, Petra und Melissa getroffen. Wir waren in einer Bar und haben den ganzen Abend gequatscht. Ich kenne **die drei/sie** ja schon ewig. ***Eine** konnte jedoch nicht und hat an dem Abend gefehlt.
*'Yesterday, I met with Sandra, Petra and Melissa. We were in a bar and chatted the whole evening. I have known **the three/them** forever. **One** couldn't come however and was missing that evening.'*

Thus, a nominal in the discourse context cannot be a requirement for the partitive interpretation as it is for the elliptic interpretation of *ein(er)*. Note however that plural pronouns and collective noun phrases can also occur in full partitive constructions, as shown in (128).

- (128) einer von ihnen, eine der drei
one of them, one of the three

The possibility of *ein(er)* taking a plural pronoun or collective NP as an antecedent in a partitive interpretation is therefore further evidence for the assumption that the partitive interpretation is actually based on a full partitive structure.

4.2.3 Challenges and open questions

In this section, I will address some of the challenges and open questions the proposal I have made faces.

The first problem concerns the relationship of the German pronoun *ein(er)* with other bare determiners. So far, I have treated them alike, assuming for anaphoric interpretations that the pronoun and bare determiners in general behave the same. However, this assumption has been made without taking into account any peculiarities an individual determiner might have. In fact, I have even argued that the pronoun *ein(er)* is special because of its multiple interpretations. This might also affect the extent to which it is interpreted

anaphorically (see also the next point), and why should other determiners not show similar peculiarities? In this chapter, I have looked at English and German data, but other languages might differ in this respect. In fact, even English and German differ. In English, quantifiers like *some* or *any* also come in a distinguishable non-anaphoric form (i.e., *someone* or *anyone*), and are therefore in the bare form more likely to be interpreted anaphorically. In German, however, this really seems to be dependent on the determiner. For example, numerals are very likely to be interpreted anaphorically, while the quantifier *jeder* ('every') is quite likely to be interpreted non-anaphorically (i.e., referring to a human referent). The exact limit of the proposal, especially concerning other languages, is therefore beyond this dissertation and will be left open at this point. Furthermore, even in English and German, not every indefinite determiner can be used barely and therefore as an anaphoric bare determiner (for example, the English indefinite article cannot occur without an overt noun).

Another open question concerns the discourse behavior of bare determiners in general and the pronoun *ein(er)* in particular. Note that the examples I have used so far that typically receive a partitive interpretation should actually in principle be ambiguous. This is shown in (129). In principle, it should be plausible that *some* here either refers to some of the ten students that entered or to some other students that were possibly already present in the classroom. Nonetheless, example (129) is preferably interpreted partitively, and the elliptic interpretation is not available to the same extent.

(129) Ten students entered the classroom. **Some** sat down.

The question now is how this preference comes about. Is it simply due to coherence requirements or do other factors (for example parallelism, grammatical role, etc.) play a role? For example, Falco and Zamparelli (ms.) mention that a partitive interpretation is more likely if the determiner occurs in subject position than if it occurs in object position. The German indefinite pronoun *ein(er)* here seems particularly interesting as it shows more possible interpretations than other determiners and therefore a more diverse ambiguity. The following chapters will concentrate on this exact question and further investigate how and which discourse factors influence the interpretation of the indefinite pronoun *ein(er)*.

To sum up, in this section, I have proposed a clear distinction between an elliptic and a partitive interpretation of anaphoric indefinite determiners that is based on two underlying structures. I have shown how bare determiners refer on different linguistic levels depending on their interpretation, provided evidence for the proposal from the German indefinite pronoun *ein(er)*, and discussed some open questions regarding the approach. While so far, the distinction of two anaphoric interpretations for indefinite determiner might seem pretty straightforward, such a dual approach is actually uncommon, as the linguistic literature so far seems to opt for uniform accounts of the interpretation of bare determiners, assuming either NP-ellipsis or deletion of partitive phrases for all occurrences of anaphoric indefinite determiners. In the remainder of this chapter, I will present both research directions and argue why my account is better suited to explain linguistic facts and observations.

4.3 The noun phrase ellipsis approach

4.3.1 Summary

Bare determiners have traditionally been analyzed as involving noun phrase ellipsis (for example, Lobeck, 1995; Bernstein, 1993; Panagiotidis, 2003; Corver & van Koppen, 2011; Alexiadou & Gengel, 2012). Thus, it is assumed that sentences like (130a) with the bare determiner *some* are based on sentences like (130b) with the full noun phrase *some horror movies*. However, the literature does not differentiate structure-wise between sentences where a brand-new referent is introduced in the discourse and sentences that show partitivity. In the latter case, as illustrated in (131), ellipsis of a common noun phrase would be assumed, too. I will therefore call this assumption the noun phrase ellipsis approach.

- (130) a. Peter doesn't want to watch horror movies. **Some** are just too much for him.
 b. Peter doesn't want to watch horror movies. **Some ~~horror movies~~** are just too much for him.
- (131) Peter watched 20 horror movies last year. **Some ~~horror movies~~** were just too much for him.

Research on noun phrase ellipsis focuses on problems such as antecedent mismatches or licensing conditions (for an overview, see Saab, 2019), but a discussion on a potentially different structure of partitive interpretations of bare determiners seems to be missing. As it assumes just one underlying structure (i.e., NP-ellipsis for all anaphoric uses of bare

determiners), the assumptions in this research clearly differ from the dual approach that proposed in the previous section, which differentiates NP-ellipsis from cases with a partitive null proform. The goal of this section is to introduce the noun phrase ellipsis approach, focusing on the question of how it handles cases of partitivity, and to show why this approach could be problematic.

The concept of partitivity is not entirely neglected in the literature on noun phrase ellipsis. Instead, it is discussed as a licenser (Sleeman, 1996) or as having effects on the interpretation and processing of bare determiners (for example, Frazier et al., 2005; Hendriks & de Hoop, 2001; Paterson et al., 2009; Wijnen & Kaan, 2006). The aspect of processing is discussed in more detail in the next chapter, and I will therefore disregard it in this chapter. Note however that the literature here also does not assume different structures for elliptic and partitive interpretations as I have proposed above.

The concept of partitivity as a licenser of noun phrase ellipsis is put forward in Sleeman (1996, see also Valois & Royle, 2009; Alexiadou & Gengel, 2012). Based on the observation that ellipsis is only possible (i.e., licensed) after some determiners or adjectives, Sleeman proposes that noun phrase ellipsis is licensed by a [+partitive] element in the syntactic structure of the noun phrase (contra the assumption that morphological properties are responsible for ellipsis licensing, see for example Lobeck, 1995). However, the terminology here might be a bit confusing. For Sleeman, partitive means properly or improperly included within a set as well as potentially but not necessarily specific. While the latter does not clearly define the term as it is not a necessity, the former still seems to be very broad in that this type of definition leaves open what is counted as the superset here. The definition does not however refer to the case where there is a clear set-subset relationship between two discourse referents (though this case can be included). Partitivity as a licenser thus does not refer to the same concept that is dealt with in this chapter. Also, Sleeman and other related literature still assume only one structure for bare determiners, with a single nominal slot that is phonologically empty, and therefore address a very different question.

The literature on noun phrase ellipsis therefore analyzes bare determiners as involving ellipsis of an NP without differentiating cases where the referent of the determiner stands in a set-subset relation to an already-introduced discourse referent (what I have called the partitive interpretation) from cases where a brand-new discourse referent is introduced (what I have called the elliptic interpretation). While – as far as I know – this is not

discussed explicitly, this approach would then mean that the partitive interpretation is not based on a different underlying structure but would simply be due to domain or contextual restrictions. This mechanism is for example visible in the use of universal quantifiers like *all* or *every*. In example (132), *all eyes* in the second sentence does not refer to all eyes in general, but is contextually restricted – here it only refers to all eyes of people in the room.

(132) Peter entered the room. All eyes were on him.

A similar process could then explain why bare determiners are sometimes interpreted partitively (i.e., as referring to a subset of an already-introduced set). For example, in (133), it would be assumed that *some* involves noun phrase ellipsis and refers to some students. However, as a group of students has been talked about already, the interpretation is restricted to this contextual domain instead of referring to students in general. This ensures a coherent storyline and results in the partitive interpretation.

(133) A group of students entered the room. **Some** looked pretty tired.

The noun phrase ellipsis approach – assuming ellipses of a common noun phrase for all cases of anaphoric bare determiners – has the benefit that no additional structure has to be assumed in the case of the partitive interpretation. Furthermore, at least for the German pronoun *ein(er)*, we have seen in Chapters 2 and 3 that the partitive and elliptic interpretations actually behave the same for a lot of semantic and pragmatic properties. Not assuming a fundamental difference would elegantly account for this fact. In the next chapter, however, we will see why such an approach is problematic.

4.3.2 Problems with the approach

The noun phrase ellipsis approach – based on assumptions in the literature on NP-ellipsis – suggests that there is no structural difference between a partitive and an elliptic interpretation of *ein(er)* and other bare determiners. Instead, bare determiners are in general analyzed as involving ellipsis of a common noun phrase. A subset interpretation in the case of the partitive interpretation could be explained by contextual restrictions. In this section, however, I will argue that such an approach seems to be on the wrong track.

A first argument, formulated in Falco and Zamparelli (ms.), is based on Italian data. Italian allows determinerless *ne* (Falco & Zamparelli, 2016), a visible nominal with an absent

determiner, as shown in example (134) from Falco and Zamparelli (ms:7). In the example, *ne* uttered by speaker B could be interpreted elliptically (i.e., could mean ‘*I also checked trucks*’), but cannot be interpreted partitively and link to the set of trucks introduced by speaker A.

(134) A: Ho appena esaminato i tuoi **camion**_i.

B: Anche io **ne**_i ho controllati.

*‘A: I have just examined the your **trucks**_i.’*

*B: Also, I have checked **ones**_i.’*

Now, the noun phrase ellipsis approach has problems explaining this data. Why should contextual restrictions be impossible in such a scenario and prevent a subset interpretation? However, if we assume that there are two interpretations of bare determiners, and the partitive interpretation is based on a full partitive structure, an explanation of the Italian data is straightforward. Canonical partitive phrases cannot be determinerless, as shown in (135). Thus, in cases such as (134) where the NP-proform is visible but the determiner is absent (which therefore would equal a determinerless partitive phrase), partitive readings are impossible.

(135) a. *I checked of the ten trucks.

b. *I checked trucks of the ten vehicles.

Second, if the partitive interpretation of bare determiners is only based on contextual restrictions, bare determiners should behave similarly to other determiners or indefinite pronouns that cannot be used in a partitive (see also Gagnon, 2013; Falco and Zamparelli, ms). However, this is not the case, as I will show for German *jemand*, an indefinite pronoun that cannot be interpreted anaphorically (it always refers to an indefinite human referent) or used in a genitive partitive construction. These properties are illustrated in (136). Note that in (136a), *jemand* refers to an indefinite human referent who is very unlikely a teacher.

(136) a. Peter hat einen Lehrer getroffen und Sandra hat auch **jemanden** getroffen.

*‘Peter met a teacher and Sandra also met **someone**.’*

b. *Ich sah **jemanden** der drei Männer.

*‘I saw **someone** of the three men.’*

Now, there are some cases where the pronoun seems to be interpreted as contextually restricted. For example, in (137), *jemand* refers to some of the people in the tram, not just to someone in the world. Only this makes sense, as it ensures a coherent storyline.

- (137) Die Straßenbahn war morgens mal wieder gut gefüllt. Plötzlich stieß **jemand** einen lauten Schrei aus.
'The tram was once again well filled in the morning. Suddenly, someone let out a loud scream.'

However, if we directly compare *jemand* with the pronoun *ein(er)*, we see that they behave quite differently. This is illustrated in the examples in (138).

- (138) a. Die Straßenbahn war morgens mal wieder gut gefüllt. Drei Männer standen dicht gedrängt am Ticketautomaten. Plötzlich stieß **jemand** einen lauten Schrei aus.
'The tram was once again well filled in the morning. Three men were crowded around the ticket machine. Suddenly, someone let out a loud scream.'
- b. Die Straßenbahn war morgens mal wieder gut gefüllt. Drei Männer standen dicht gedrängt am Ticketautomaten. Plötzlich stieß **einer** einen lauten Schrei aus.
'The tram was once again well filled in the morning. Three men were crowded around the ticket machine. Suddenly, one let out a loud scream.'

In (138a), *jemand* is again contextually restricted to the general scene in that it most likely refers to someone in the tram. It is however not very likely that it refers to one of the three men introduced in the second sentence. A real set-subset interpretation is therefore not preferred. This is very different for the pronoun *ein(er)* in (138b). Here, *einer* in the third sentence clearly refers to one of the three men. This is a strong argument that something other than contextual restriction alone affects the interpretation of *ein(er)*.

A similar pattern can be observed if we replace the bare determiner with a full noun phrase in a partitive setting. The noun phrase ellipsis approach would predict no difference in interpretation in such a case. However, as example (139) shows, this is not the case. While *eine* in (139a) clearly refers to one of the women introduced in the second sentence, *eine Frau* in (139b) seems more flexible and can also refer to a fourth woman. Instead, replacing the bare determiner with a full partitive phrase (as shown in (139c)) keeps the meaning of the sentences constant (see also Gagnon, 2013, and the discussion in section 4.4. for more examples).

- (139) a. Die Straßenbahn war morgens mal wieder gut gefüllt. Drei Frauen standen dicht gedrängt am Ticketautomaten. Plötzlich stieß **eine** einen lauten Schrei aus.
*'The tram was once again well filled in the morning. Three women were crowded around the ticket machine. Suddenly, **one** let out a loud scream.'*
- b. Die Straßenbahn war morgens mal wieder gut gefüllt. Drei Frauen standen dicht gedrängt am Ticketautomaten. Plötzlich stieß **eine Frau** einen lauten Schrei aus.
*'The tram was once again well filled in the morning. Three women were crowded around the ticket machine. Suddenly, **a woman** let out a loud scream.'*
- c. Die Straßenbahn war morgens mal wieder gut gefüllt. Drei Frauen standen dicht gedrängt am Ticketautomaten. Plötzlich stieß **eine der Frauen** einen lauten Schrei aus.
*'The tram was once again well filled in the morning. Three women were crowded around the ticket machine. Suddenly, **one of the women** out a loud scream.'*

Taken together, I conclude that the noun phrase ellipsis approach cannot account for the special behavior of the pronoun *ein(er)* and other bare determiners in a partitive setting. Instead, the examples in this chapter have shown that an underlying structure with a silent partitive proform can best account for the data and that the partitive interpretation is unlikely to be due to contextual restrictions.

4.4 The partitive approach

4.4.1 Summary

Recall that in the beginning of this chapter, opting for a dual approach, I argued that anaphoric bare determiners could either be interpreted elliptically based on NP-ellipsis or, due to a partitive null proform, receive a partitive interpretation. The literature on bare determiners, however, only assumes one underlying structure for all cases of anaphoric indefinite bare determiners. While the papers discussed in section 4.3 assume NP-ellipsis for both elliptic and partitive interpretations of discourse-dependent bare determiners, Gagnon (2013) takes a different approach and argues that instead of involving ellipsis of a nominal, all bare determiners involve ellipsis of a partitive phrase containing a plural anaphoric pronoun. I will call this assumption the partitive approach. This section seeks to present his core argument and then discuss cases where bare determiners that do not show partitivity are used anaphorically.

Essentially, Gagnon's approach does not differentiate between elliptic and partitive cases but assumes an elided partitive structure, as shown in (140), for all bare determiners.

(140) Ten boys walked in the room. **Many of them** sat down

Gagnon supports his approach on the basis of the anaphoric behavior of bare determiners, the syntactic distribution of those that license ellipsis, and their behavior in regard to deep event anaphora. To illustrate the benefits of such an approach, I will briefly review some of his arguments.

First, Gagnon argues that the anaphoric behavior of bare determiners resembles that of partitive phrases instead of 'normal' nominal phrases. This becomes visible if bare determiners have to be interpreted in contexts with multiple discourse referents (see example (141)) or in donkey sentences with split antecedents (see example (142)).

(141) I arrived in class five minutes before the start. There were boy scouts and girl scouts standing at their desks. Then, ten young boys walked in whistling.

a. **Many** sat down.

b. **Many of them** sat down.

c. **Many boys** sat down

In (141a), *Many* can either be interpreted as referring to many of the ten young boys introduced in the third sentence or to many people out of the set of boy scouts, girl scouts, and the ten young boys (the most salient set or the total set). However, it cannot be interpreted as referring to the combined set of boy scouts and ten young boys (without the girl scouts). For the partitive version in (141b), we find exactly the same interpretations as in (141a), with *many of them* being ambiguous between referring to the most salient set or the total set. On the other hand, in (141c) *many boys*, which corresponds to the covert structure assumed under a noun phrase ellipsis approach, is not ambiguous and is interpreted as referring to many of the full group of boys present in the context (the combined set of boy scouts and young boys).

In donkey sentences with split antecedents, as illustrated in (142), bare determiners are again interpreted in the same way as overt partitives. In the example, the bare determiner *one* refers to either the wife or the donkey, and the same is true for the overt partitive *one of them*. A noun phrase ellipsis account cannot explain such examples, as using a simple noun phrase instead of the bare determiner is even ungrammatical.

- (142) If a man has a wife who owns a donkey, he surely likes **one** (of them/*wife and/or donkey) better.

Gagnon concludes that the anaphoric behavior of bare determiners in contexts with multiple antecedents or in donkey sentences with split antecedents is a strong argument that instead of involving noun phrase ellipsis, bare determiners should be analyzed as involving ellipsis of a partitive phrase.

Furthermore, Gagnon argues that the same determiners that allow for ellipsis (see (143a)) also allow for partitives (see (143b)), while determiners that are not allowed for partitives cannot be used barely. An analysis of bare determiners involving ellipsis of a partitive phrase is therefore an elegant way to explain the observed distribution. As example (143c) shows, the standard noun phrase ellipsis account cannot account for this, as all determiners are allowed using the potentially elided noun.

- (143) A group of boys walked into the room.
- a. Most/Each/Some/One/All/Many/Few/Both/*Every/*The/*A/*No sat down.
 - b. Most/Each/Some/One/All/Many/Few/Both/*Every/*The/*A/*No of them sat down.
 - b. Most/Each/Some/One/All/Many/Few/Both/Every/The/A/No boy/boys sat down.

A similar argument concerns modification. As (144) shows, bare determiners and partitive phrases can be modified by adjuncts, but modification with (at least some) adjectives is not possible. On the other hand, for full noun phrases, both options are allowed.

- (144) Ten boys walked into the room.
- a. Some / Some of them / Some boys from Swabia sat down.
 - b. *Some tall / *Some tall of them / Some tall boys sat down.

Overall, Gagnon gives good and convincing arguments that, at least in some contexts, bare determiners are followed by a covert partitive phrase. We will see, however, in the next section that the partitive approach also comes with some problems.

4.4.2 Problems with the approach

Gagnon (2013) argues that bare determiners are followed by a covert partitive phrase instead of simple NP-ellipsis. The main problem with this approach, however, is that it

again assumes a uniform structure for all anaphoric bare determiners. However, many contexts in which a bare determiner is used do not show a partitive relationship. Two examples of this are shown in (145). *Two* in example (145a) cannot be a subset of *a magazine*, as it is higher in number, and *some* in (145b) also cannot refer to a subset of *twenty students*, as it is impossible for a person to both be sitting in the classroom and be at home. In both examples, the determiner refers to a discourse-new referent.

(145) a. Lisa is reading a magazine. Simon is reading **two**.

b. Twenty students were sitting in the classroom and **some** were still at home.

Gagnon addresses two cases where ellipsis in the nominal domain is used without a clear partitive relationship: contrastive anaphora and maximal set anaphora. I will briefly present these cases. We will see, however, that they alone cannot account for all the non-partitive cases where a bare determiner is used.

First, Gagnon looks at French examples such as (146, from Gagnon 2013:320). French allows the stranding of adjectival modifiers, which seems to be compatible with the traditional account of noun phrase ellipsis.

(146) J'ai vu les garçons dans la cour. Les grands jouaient avec **les petits**.

'I saw the boys play in the yard. The tall ones played with the small ones.'

Gagnon argues that adjectival stranding in French is actually not a case of partitive ellipsis but has to be treated on par with English *one* anaphora. He suggests that the cases illustrated in (146) also do not show NP-ellipsis, but can be analyzed as having a null anaphoric pronoun (the equivalent of *one*) in the structure. He calls this contrastive anaphora, as such cases always show some kind of contrast and are therefore only felicitous with a modifier.

The use of non-partitive anaphoric bare determiners is, however, not limited to contrastive contexts but much more widespread. Instead, there are a number of contexts where an anaphoric bare determiner (without modification) can be used that do not even introduce a discourse referent as an antecedent. These contexts therefore cannot show partitivity or contrast and include contexts where the antecedent is introduced under negation or an intentional operator or is used with a predicative or a kind antecedent, as shown in example (147) for the German indefinite pronoun *ein(er)*.

(147) a. **Negation**

Peter hat im Urlaub keinen Delphin gesehen. Aber Sandra ist schon mal mit **einem** geschwommen.

*'Peter didn't see a dolphin on vacation. But Sandra has swum with **one** before.'*

b. **Intentional context**

Peter wünscht sich zu Weihnachten einen Pullover. Sandra hat ihm daher **einen** gekauft.

*'Peter wants a sweater for Christmas. Sandra has therefore bought him **one**.'*

c. **Predicatives**

Peter ist Lehrer und Paul ist auch **einer**.

*'Peter is a teacher and Paul is **one** too.'*

d. **Kind antecedents**

Der Delphin ist ein seltenes Tier doch Peter hat im Urlaub **einen** gesehen.

*'The dolphin is a rare animal but Peter saw **one** on vacation.'*

Second, Gagnon looks at cases like (148, from Gagnon 2013:331), where the bare determiner *most* is not interpreted as referring to a subset of the few MPs introduced in the first clause but as an anaphoric to the maximal set (i.e., all current MPs of the relevant country).

(148) Few MPs attended the meeting, but most attended the happy hour afterwards.

Gagnon argues that the case of maximal set anaphora could also be applied to other contexts. For example, in (147a), it could be the maximal set of dolphins that *einen* in the second clause refers to. Gagnon, however, just states that what exactly the maximal set is needs to be determined in the context and leaves it open when such a reading is available. This is problematic as it is a rather weak statement and would in principle not limit the occurrence of maximal set anaphora, which leaves a lot of open questions. For example, if maximal set anaphora is always an option, why can *many* in example (149) not be interpreted as referring to many of the boys in the context (i.e., boy scouts and young boys)? It therefore seems more likely that maximal set anaphora is actually noun phrase ellipsis plus potentially contextual restrictions.

(149) I arrived at class five minutes before the start. There were boy scouts and girl scouts standing at their desks. Then, ten young boys walked in whistling. Many sat down.

Also, the partitive account argues that the internal argument - which is coreferential with an already-established discourse referent of a partitive - is required to have proper sub-parts (i.e., either has to be plural or a mass noun) (see also Barker, 1998). This then would not allow for singular kind antecedents, which are possible, however, as shown in (147d). Maximal set anaphora also cannot help to explain the case of kind antecedents, as the maximal set is still singular – there is only one kind of dolphin. Reference to all members of the kind, on the other hand, would require an additional type shift. A similar phenomenon can be found regarding conceptual anaphora (Gernsbacher, 1991), but this does not seem applicable to cases where the kind is introduced in the singular. In fact, (150), which uses a full anaphoric partitive structure instead of a bare determiner, shows that the partitive proposal does not work for kind antecedents. Neither a singular nor a plural anaphoric pronoun in the partitive is acceptable in such a context.

(150) a. *Der Delphin ist ein seltenes Tier, doch Peter hat im Urlaub **einen von ihm** gesehen.

*'The dolphin is a rare animal but Peter saw **one of it** on vacation.'*

b. *Der Delphin ist ein seltenes Tier, doch Peter hat im Urlaub **einen von ihnen** gesehen.

*'The dolphin is a rare animal but Peter saw **one of them** on vacation.'*

If, however, as I have proposed in this chapter, elliptic interpretations of bare determiners only refer to the nominal as an antecedent, they do not require a type shift even if the full DP containing the antecedent nominal refers to a kind.

I therefore conclude that a uniform partitive approach also cannot explain the full set of data. For this, we need an approach that differentiates between elliptic and partitive interpretations of anaphoric bare determiners as formulated in section 4.2 for the German indefinite pronoun *ein(er)* and indefinite anaphoric determiners in general.

4.5 Summary

The chapter discussed anaphoric interpretations of the German indefinite pronoun *ein(er)*, linking it to the discussion on bare determiners. The goal was to show that two different interpretations of the indefinite pronoun *ein(er)* have to be clearly distinguished: an elliptic interpretation and a partitive interpretation. This assumption was expanded to indefinite anaphoric quantifiers more generally.

Section 4.2 first presented the proposal that the elliptic interpretation of *ein(er)* and other anaphoric determiners is due to the ellipsis of a noun phrase, while the partitive interpretation is due to a silent partitive proform. It was argued that the former process follows rules of NP-ellipsis while the partitive interpretation refers to the discourse model. I furthermore presented data from the anaphoric behavior of the indefinite pronoun *ein(er)* that supported the proposed analysis, and discussed challenges and open questions regarding the account. The chapter then reviewed the two possibilities of a uniform analysis, discussing the noun phrase ellipsis approach and the partitive approach. Section 4.3 focused on the noun phrase ellipsis approach, assuming that all anaphoric quantifiers involve ellipsis of a simple noun phrase. It showed, however, that contextual restrictions alone cannot account for the special behavior of the partitive interpretation. Section 4.4 then focused on the partitive approach, which assumes an elided partitive structure for all bare determiners. Again, however, this approach came with some problems, mainly that bare quantifiers and the indefinite pronoun *ein(er)* can also be used anaphorically in contexts that do not show partitivity. Both accounts, therefore, were unable to explain all the data, so I concluded that this can only be done by a mixed approach, as proposed at the beginning of the chapter.

In the following chapters, I will now look more closely at the pronoun *ein(er)* in discourse and try to tackle some of the open questions formulated in this chapter. The goal is to look at ambiguous contexts and to test experimentally how an ambiguous pronoun *ein(er)* is interpreted in such a context. Furthermore, it will be asked what discourse factors influence the interpretation of an ambiguous pronoun *ein(er)*.

5 Testing interpretational preferences for the indefinite pronoun *ein(er)*

5.1 Introduction

One main claim of this dissertation is that, just as definite pronouns, indefinite pronouns also take part in discourse linking. The German indefinite pronoun *ein(er)* is a prime example of this idea as it shows two anaphoric interpretations: an elliptic and a partitive one. However, an investigation of the role of indefinite pronouns in discourse highlights the fact that there are different types of discourse linking such as coreferentiality, different types of ellipsis, and even destressing patterns. As the type of discourse linking differs for the anaphoric interpretations of *ein(er)*, in this chapter, I want to argue that this is reflected in interpretational preferences of an ambiguous pronoun *ein(er)*.

While personal pronouns establish a coreferential relationship with their antecedent, indefinite pronouns introduce new referents into the discourse. Therefore, in some cases, indefinite pronouns do not establish any anaphoric links with the previous discourse. An example would be the independent interpretation of *ein(er)*, which, if used referentially, introduces an unknown human being. The elliptic interpretation of *ein(er)*, however, does refer back anaphorically, as it involves the ellipsis of a noun phrase, and its meaning is therefore dependent on an antecedent in the discourse. The partitive interpretation of *ein(er)* even refers back to another discourse referent, though not in a coreferential but rather in a set-subset relationship. The research on indefinite pronouns thus allows us to highlight different types of discourse linking. Based on this background, in this chapter, I will look at examples where *ein(er)* is ambiguous between multiple interpretations. For the purpose of this chapter, I will focus on the elliptic, the partitive, and the independent interpretation and ask how readers interpret such an ambiguous pronoun. Therefore, my hypothesis for this chapter is that different types of discourse linking are reflected in interpretational preferences. To answer the research question, I will furthermore build on insights from the research on anaphoric quantifiers, which – as the discussion in Chapter 4 has shown – display a similar ambiguity in anaphoric interpretations to that of the pronoun *ein(er)*.

In the remainder of this chapter, I will first build on the results obtained so far in this dissertation and use my assumptions regarding semantic restrictions and discourse requirements for the individual interpretations of *ein(er)* as well as the structural makeup of the anaphoric interpretations to predict interpretational preferences for an ambiguous pronoun *ein(er)*. The chapter will then review the research on the interpretation and processing of anaphoric quantifiers, discussing the observed partitive preference and presenting three explanatory approaches. Section 5.4 will then present a rating experiment that I conducted to answer the research question of this chapter, and section 5.5 will discuss the results, linking them back to the previous assumptions and predictions. As usual, the chapter will end with a short summary.

5.2 Predicting interpretational preferences for *ein(er)*

As we have already seen in Chapter 2, the pronoun *ein(er)* has multiple interpretations. In fact, based on different semantic restrictions and discourse requirements, I have proposed that there are six different interpretations of the German indefinite pronoun *ein(er)* – independent, impersonal, cataphoric, elliptic, partitive, and lexicalized. However, there are of course sentences that fulfill all requirements for more than one interpretation. The goal of this chapter therefore is to ask how readers interpret such an ambiguous indefinite pronoun *ein(er)*, focusing on the two anaphoric interpretations presented in Chapter 4 (the elliptic and the partitive interpretation) and comparing them to the independent interpretation. In this section, based on the assumptions I have made in the previous chapters, I will formulate predictions for interpretational preferences of *ein(er)*, which later will be tested experimentally.

Example (151) illustrates three possible interpretations of the pronoun *ein(er)*: In (151a) it is used independently, referring to an indefinite human referent. In (151b) it is used elliptically. Here, *eines* links back to the NP *Fahrrad* ('bicycle') and therefore also refers to a bicycle, but one that has not been mentioned before. In (151c), *eine* is used partitively, so the pronoun refers to one of the necklaces introduced as a set in the previous clause. In both (151b) and (151c), *ein(er)* links back to an element in the discourse. The elliptic and the partitive interpretation are therefore treated under the term 'anaphoric interpretations'.

- (151) a. Gestern hat mich in der Bahn **einer** angesprochen.
 ‘Yesterday, I was approached by **someone** on the train.’
- b. Sandra hat ein Fahrrad und Jana hat auch **eines**.
 ‘Sandra has a bicycle and Jana has **one** too.’
- c. Sandra hat viele Halsketten und **eine** gefällt Jana sehr.
 ‘Sandra has many necklaces and Jana likes **one** very much.’

There are multiple reasons why in (151) each respective pronoun is interpreted in a particular way. Next to world knowledge and pragmatic inferences, each interpretation comes with some individual requirements. For example, in (151a), *einer* is used in the masculine and is the subject of the sentence. Its syntactic and morphological properties therefore fulfill all requirements for the independent interpretation (and, for example, exclude the impersonal one). Furthermore, there is no suitable NP or set in the discourse that would license an anaphoric interpretation. In (151b), on the other hand, *eines* cannot be interpreted independently, as it has the gender neuter. The discourse, however, provides an NP in the neuter and therefore allows an elliptic interpretation. The partitive interpretation is blocked, however, as the NP is part of a DP that refers to a singular element, thus there is no set or group available in the discourse. This is, however, the case in (151c), where the set *viele Halsketten* has been mentioned in the first clause and which therefore also allows a partitive interpretation. Note that the context in (151c) not only provides a possible antecedent for a partitive interpretation, but as there is also an NP, namely *Halsketten* (‘necklaces’), an elliptic interpretation would also be possible.

In this chapter, I will investigate examples where one or both anaphoric interpretations of *ein(er)* are in competition with an independent interpretation and ask how readers prefer to interpret such an ambiguous pronoun. To make sure that an independent interpretation is in principle possible, in this chapter, I will from now on only focus on the male form of the pronoun (i.e., *einer*). In Chapter 4, it was argued that the elliptic interpretation of *ein(er)* is the result of NP-ellipsis, while in the partitive interpretation, *ein(er)* is followed by a partitive null proform. Furthermore, it was argued that, containing an anaphoric proform, the partitive interpretation refers on the level of the mental discourse model. In the following, I want to argue that because of this property, the partitive interpretation satisfies discourse principles such as topic continuity (Givón, 1983). When in competition with an independent interpretation, it is therefore usually the preferred interpretation. The elliptic interpretation on the other hand refers only on the level of syntactic structure. I

argue that this property should be reflected in readers' interpretations of underspecified contexts, as an elliptic interpretation is a less strong competitor of an independent interpretation than a partitive one.

For the investigation in this chapter, I will distinguish between two types of underspecified contexts. First, a context that has an accessible set or group already established as a discourse referent usually allows for a partitive, an elliptic, or an independent interpretation of the pronoun *einer*. Such a context is illustrated in (152a). Second, if there is only an accessible NP but no set available in the context, *einer* can only be interpreted as elliptic or independent (as illustrated in (152b)). Note that if there is neither an accessible set nor an NP, as illustrated in (152c), the only remaining interpretation of the pronoun *einer* is the independent one.

(152) Im Kino wurde heute der neue James Bond gezeigt.

a. **Zwei Studenten** setzten sich in die letzte Reihe.

b. **Ein Student** setzte sich in die letzte Reihe.

c. -

Bevor der Film begann, setzte **einer** seine Brille auf.

'The new James Bond was shown in the cinema today. (Two students/ a student sat in the back row.) Before the film started, one put on his glasses.'

I predict that in examples that are similar to (152a) (i.e., where a partitive interpretation of the pronoun is possible), an anaphoric interpretation is a stronger competitor of the independent interpretation. In other words, I predict that *einer* is more likely to be interpreted anaphorically in (152a) than in (152b). When both anaphoric interpretations are allowed, as shown in example (152a), I predict that readers prefer to interpret the pronoun partitively instead of elliptically.

These formulated predictions will be tested experimentally in the upcoming sections. First, however, I will take a look at the research on the interpretation and processing of anaphoric quantifiers. As it deals with a similar question and terminology, I will use this research to support my assumptions regarding the interpretation of an ambiguous pronoun *einer*.

5.3 The interpretation of anaphoric quantifiers

5.3.1 The partitive preference

Similar to the described ambiguity for *ein(er)*, example (153) below can be interpreted in two different ways. The bare quantifier *Most* in the second sentence can either refer to most students out of the set of four students introduced in the first sentence or to a group of newly introduced students that do not belong to the set in the first sentence (for example students that were already in the classroom).

(153) Four students entered the classroom. **Most** wore blue jeans.

The example illustrates that bare quantifiers display the same ambiguity between a partitive and an elliptic interpretation that has already been observed for the indefinite pronoun *ein(er)*. The purpose of this section is to review the literature on the interpretation and processing of such anaphoric quantifiers. The obtained information will be used in the remainder of this chapter, which will investigate interpretational preferences for the indefinite pronoun *ein(er)*.

In Chapter 4, it was argued that the ambiguity illustrated in (153) is due to two different underlying structures. For the elliptic interpretation, I assumed ellipsis of an NP after the quantifier, while a partitive interpretation is based on a canonical partitive structure and involves a silent partitive proform. Note that a similar ambiguity can be found in sentences where the quantifier is followed by an overt noun (see (154)). *Most students* in sentence two of example (154) can either refer to most of the four already introduced students or establish a new set in the discourse.

(154) Four students entered the classroom. **Most students** wore blue jeans.

Although it has not yet been argued that there are two different underlying structures, the interpretation and processing of anaphoric quantifiers has already received considerable attention in the linguistic literature (see, Frazier, 1999, 2000; Frazier et al., 2005; Hendriks & de Hoop, 2001; Paterson et al, 2009; Wijnen et al., 2004; Wijnen & Kaan, 2006; Mousoulidou, 2009). Often focusing on numerals, the main observation of this research is that (adult) readers who encounter such an ambiguous quantifier in discourse seem to have a clear interpretational preference: they favor a partitive interpretation over an elliptic or new set one.

The partitive preference in the interpretation of anaphoric quantifiers has been argued for theoretically as well as shown experimentally. For example, Frazier et al. (2005) conducted a simple questionnaire study in which participants were shown sentences like the one below in (155) that allowed for both interpretations, followed by a simple yes/no question regarding how the ambiguous quantifier was interpreted. Participants were simply asked to read the sentences and answer the subsequent questions. Frazier et al. found that participants chose the partitive interpretation in 65% of the cases, which turned out to be significantly greater than a presumed 50% chance baseline. They therefore prefer this interpretation over an elliptic/new set one.

(155) Five ships appeared on the horizon. Three ships sank.

Were the three ships that sank among the five ships that appeared on the horizon?
Yes _____ No _____ (Frazier et al., 2005:206)

Multiple experimental studies, with methods ranging from questionnaire (Frazier et al., 2005; Wijnen & Kaan, 2006) to eye-tracking (Frazier et al., 2005) and EEG observation (Kaan et al., 2007), have confirmed the observation from Frazier et al.: when it comes to the interpretation of ambiguous anaphoric quantifiers, readers prefer to interpret them partitively. The interpretation of anaphoric quantifiers has also been investigated from a developmental perspective (Wijnen et al., 2004; Mousoulidou, 2009). For an overview of experimental and theoretical approaches, see Paterson et al. (2009).

Now, there are three alternative accounts that try to explain this observed partitive preference. First, Hendriks and de Hoop (2001) argue in the Optimality Theory framework that the interpretation of a quantifier follows from a particular ranking of certain discourse constraints. Second, Frazier (1999) and Frazier et al. (2005) propose that structural constraints govern the interpretation of anaphoric quantifiers. Third, the New Referent hypothesis tries to link the observed preference to processing costs associated with the introduction of new discourse referents (Kaan et al., 2007; Paterson et al., 2009). In the remainder of this section, I will discuss these three accounts in more detail.

5.3.2 The DOAP principle

The first theoretical account discussed here that deals with the interpretation of anaphoric quantifiers in discourse is that of Hendriks and de Hoop (2001). It is formulated in the framework of Optimality Theory (Smolensky & Prince, 1993), a linguistic framework

that proposes that the observed form and interpretation of language arises from the optimal satisfaction of competing constraints.

In their account of the interpretation of quantifiers, Hendriks and de Hoop argue that every quantified expression gives rise to a set of different interpretations. This set of interpretations is then evaluated with respect to a number of soft constraints, which vary in their strength. As a result, the set of possible interpretations is reduced such that a listener is able to identify one optimal interpretation for a quantified expression within a certain context.

In their paper, Hendriks and de Hoop then formulate and discuss several constraints that become relevant for the interpretation of quantified noun phrases. One of them is the DOAP principle, based on the work of Williams (1997), which states that in a text, opportunities to anaphorize must be seized.

(156) **DOAP:** Don't Overlook Anaphoric Possibilities.

Opportunities to anaphorize text must be seized.

The DOAP principle describes a very general pragmatic constraint that states that (in the unmarked case) there is a general preference to interpret elements as anaphors in a wide sense related to the previous discourse. It therefore also accounts for the fact that personal pronouns and definite noun phrases tend to be interpreted anaphorically in discourse. It furthermore captures phenomena like deletion and destressing, which are also called anaphoric in the paper by Hendriks and de Hoop (see, Williams, 1997). DOAP is not an absolute principle, however; it can be overruled by other constraints such as the Avoid Contradiction constraint.

Hendriks and de Hoop argue that the DOAP principle is satisfied whenever an anaphoric relation satisfies one of the following constraints: Topicality, Forward Directionality, or Parallelism. For an overview of some of the proposed constraints in Hendriks and de Hoop (2001) see Table 12. For the discussion on anaphoric quantifiers and more specifically the optimal interpretation of anaphoric quantifiers as illustrated in example (157), the Forward Directionality and Parallelism constraints will become important.

(157) Four students entered the classroom. **Two** wore blue jeans.

DOAP	Opportunities to anaphorize text must be seized.
Topicality	As the antecedent of an anaphoric expression, choose a topic.
Forward Directionality	The topic range induced by the domain of quantification of a determiner (set A) is reduced to the topic range induced by the intersection of the two argument sets of this determiner ($A \cap B$).
Parallelism	As the antecedent of an anaphoric expression, choose a (logically, structurally, or thematically) parallel element from the preceding clause.
Avoid Contradiction	

Table 12: Overview of a selection of discussed constraints in Hendriks and de Hoop (2001).

Forward Directionality represents a general principle of topic continuity, based on the observation that the more specified the topic is, the more overall informativeness increases (see, also, van Kuppevelt, 1996). The constraint states that the intersection of the two argument sets of a determiner A and B is a likely topic for continuation and thus a likely antecedent for a subsequent anaphoric determiner. In example (157) above, due to this criterion, the topic range introduced by *four* in the first sentence (i.e., the set of four students) is reduced to the intersection of students and people that entered the classroom. This is the preferred anaphoric linking site in the next sentence and results in partitive interpretation of the anaphoric quantifier *Two*.

The Parallelism constraint simply requires the antecedent of an anaphoric expression to be a parallel element in the preceding text. Parallel can be understood in a logical, structural, or thematic way. In example (157), this constraint would require the antecedent of the anaphoric *Two* to be the syntactically parallel element *Four students* (both in subject position). The constraint would thus specify that example (157) is talking about two students rather than two professors and would therefore account for the elliptic interpretation (see, Paterson et al., 2009).

Now, Hendriks and de Hoop argue that the described constraints are ranked, with Forward Directionality being ranked higher than Parallelism. Therefore, in example (157), Forward Directionality would apply automatically, which explains the observed preference for the partitive interpretation. The authors argue that the lower-ranked Parallelism only comes into play if Forward Directionality cannot apply, for example because this would violate a higher-ranked constraint such as Avoid Contradiction (see the ranking in (158)). This is illustrated in example (159), where a partitive interpretation would be contradictory and we therefore interpret *Six* as referring to a new set of students.

(158) Avoid Contradiction » Forward Directionality » Parallelism

(159) Four students entered the classroom. **Six** were already inside.

The Optimality Theory-based account thus explains the observed partitive preference while accounting for the fact that some discourse contexts seem to favor an elliptic interpretation by referring to a rather general principle that anaphoric interpretations are favored in discourse. The account provides a theoretical framework that allows for the formulation of experimentally testable predictions.

5.3.3 Structural constraints on the interpretations of bare quantifiers

The second approach to the interpretation of anaphoric quantifiers that will be discussed here is the work of Frazier (1999) and Frazier et al. (2005). In the Minimal Lowering account, the authors try to answer the question of whether there are any structural constraints on the interpretation of anaphoric quantifiers.

In their argumentation, Frazier (1999) and Frazier et al. (2005) follow Diesing (1990, 1992), who claims that the interpretation of a phrase is dependent on its position with respect to the verb phrase in Logical Form (LF). More specifically, Diesing argues that a VP-internal phrase usually receives a non-presuppositional (i.e., cardinal or existential) interpretation, while a VP-external phrase receives a presuppositional (or quantificational) interpretation. Frazier (1999) applies Diesing's hypothesis to human sentence comprehension and argues that listeners follow a "minimal effort" principle, which means listeners prefer to interpret phrases in the same position in LF as they appear in at surface structure (see Frazier, 1999; 2000 for an extended development of minimal effort in the form of a "minimal lowering" principle).

Applied to the interpretation of anaphoric quantifiers, the Minimal Lowering account predicts that a potentially ambiguous quantifier that appears in subject position will by default be interpreted in a VP-external position in LF and therefore receive a presuppositional interpretation, which for Frazier translates to the partitive interpretation. On the other hand, a quantifier that appears in a VP-internal position, such as the object position, is most likely to receive a non-presuppositional (i.e., elliptic interpretation). In short, it is argued that a quantifier that is the grammatical subject of a sentence is most likely to refer

to a subset of an established referent, whereas a quantifier in a lowered syntactic position is more likely to introduce a new referent.

Turning back to the already discussed example regarding anaphoric quantifiers, repeated below in (160), we can observe that the critical quantifier *Two* appears in subject position. The Minimal Lowering account therefore correctly predicts the observed partitive interpretation for the quantifier in the second sentence in example (160a). Notice however that if we change the example such that the quantifier appears in object position (see example (160b)), the Minimal Lowering account would instead predict an elliptic interpretation for the anaphoric quantifier.

(160) a. Four students entered the classroom. **Two** wore blue jeans.

b. Four students entered the classroom. The teacher scolded **two**.

The assumptions of the Minimal Lowering account are supported by experimental evidence reported by Frazier et al. (2005). The authors ran an experiment which used two different kinds of stories (for an example, see (161)). In these stories, the potentially anaphoric noun phrase in the second sentence either appeared in subject position in a passive clause (161a) or in object position (161b). Participants were asked to read the short stories and to answer a subsequent question that revealed their interpretation of the critical quantifier.

(161) a. Five ships appeared on the horizon. Three ships were sunk by pirates.

Were the ships that pirates sank included in the five ships that appeared on the horizon?

b. Five ships appeared on the horizon. Pirates sank three ships.

Were the ships that pirates sank included in the five ships that appeared on the horizon?

Frazier et al. found that participants preferred a partitive interpretation for quantified noun phrases in subject position in 65.2% of the cases. If, however, the quantifier was presented in object position the authors found a partitive preference in only 59% of the cases. This difference turned out to be significant and was further supported by similar experimental evidence in Korean and German. The experiment of Frazier et al. however also showed an overall preference for the partitive interpretation irrespective of syntactic position, with participants choosing the partitive interpretation in nearly 60% of the cases even in the object condition. The authors argue that their results thus also point towards the

importance of factors such as discourse coherence in the interpretation of anaphoric quantifiers.

To sum up, the Minimal Lowering account demonstrates the importance of structural factors such as grammatical role for the interpretation of anaphoric quantifiers. However, as the experimental results show, anaphoric quantifiers show a partitive preference even when they occur in object position. Also, the absolute differences in the described experiment seem rather small. The account therefore cannot explain the full data set. Instead, the data from Frazier et al. (2005) shows that two phenomena influence the interpretation of anaphoric quantifiers. First, there seems to be a general preference for a partitive over an elliptic interpretation, and second, we have to account for the influence of structural factors. In fact, the influence of the factor grammatical role on the interpretation of an ambiguous pronoun *ein(er)* will be investigated in more detail in Chapter 6 and is therefore neglected in this chapter.

5.3.4 The New Referent explanation in processing

Kaan et al. (2007) and Paterson et al. (2009) provide a third explanation for the observed interpretational preferences of anaphoric quantifiers: they argue that the partitive preference occurs because of processing costs associated with establishing a new referent in the discourse.

The account is based on experimental evidence that investigates the processing of anaphoric quantifiers. In an EEG experiment, Kaan et al. (2007) asked participants to read short stories containing a bare anaphoric quantifier, while their EEG signals were recorded. An example of these stories is illustrated in (162). Kaan et al. tested two conditions. In the partitive condition (162a), the first quantifier was always a larger numeral than the second quantifier. This condition thus in principle allowed for both a partitive and an elliptic interpretation. However, based on the results of previous studies (Frazier et al., 2005; Wijnen & Kaan, 2006) as well as continuation norming research, Kaan et al. assumed that participants indeed favor a partitive interpretation when reading the second quantifier. In the second condition (the elliptic condition (162b)), the numeral of the first quantifier was smaller than that of the second quantifier. This condition thus did not allow for a partitive interpretation, leaving the elliptic as the only option. Kaan et al. predicted

that because in other studies participants had shown a partitive preference in the interpretation of anaphoric quantifiers, processing costs should occur in the elliptic condition.

(162) a. **Partitive condition**

Twelve flowers were put in the vase. Six had a broken stem and had to be cut very short.

b. **Elliptic condition**

Four flowers were put in the vase. Six had a broken stem and were trashed.

In their analysis, Kaan et al. found a late positivity around 900 ms after the onset of the second numeral in the elliptic compared to the partitive condition. The authors interpreted the found positivity as an LPC, a component which has been related to difficulties in the activation of previously mentioned discourse entities as well as context updating (van Petten et al., 1991). Kaan et al. argued that in their experiment the LPC most likely reflects processing costs that occur when participants have to update their discourse model, which is associated with the introduction of a brand-new referent into the discourse in the elliptic condition (see, also, Burkhardt, 2006 for similar findings). Thus, they argue, processing costs in the elliptic condition are not due to the violation of a linguistic constraint (such as Forward Directionality) but are associated with introducing brand-new referents into the discourse model. In the partitive interpretation, the discourse referent introduced by *ein(er)* is not brand new but weakly familiar. Research on discourse processing has shown that inferred referents are easier to access and integrate into the discourse than brand-new referents (Burkhardt, 2006; Brocher & von Heusinger, 2018). It is thus very likely that this would also hold true for weakly familiar referents.

Paterson et al. (2009) follow the interpretation of Kaan et al. and further support it with the results of an eye-tracking experiment (Paterson et al., 2008; reported in Paterson et al., 2009). In this experiment, the authors tested four different conditions, which are illustrated in Table 13. The design of the stimuli followed the design of Kaan et al.'s study, but in addition to the conditions tested there, the authors also included two unambiguous conditions. These conditions also followed either a partitive or an elliptic interpretation, but the intended interpretation was explicitly marked by *of these* for the partitive and *another* for the elliptic condition. Paterson et al. found longer re-reading times in the elliptic condition, even in the unambiguous condition. They took this as evidence that

processing costs indeed occur because of the introduction of a new discourse referent and not because a linguistic preference for a partitive interpretation is violated.

Condition	Example
Ambiguous partitive relation	The fishermen saw six ships appear on the horizon. Apparently, three ships had been bombarded by enemy fire.
Ambiguous elliptic relation	The fishermen saw two ships appear on the horizon. Apparently, three ships had been bombarded by enemy fire.
Unambiguous partitive relation	The fishermen saw six ships appear on the horizon. Of these, three ships had been bombarded by enemy fire.
Unambiguous elliptic relation	The fishermen saw two ships appear on the horizon. Another three ships had been bombarded by enemy fire.

Table 13: Overview of conditions in the discussed reading experiment by Paterson et al. (2009).

Paterson et al. argue that the New Referent account is in principle reconcilable with Hendriks and de Hoop's (2001) account, so long as the Forward Directionality constraint is a mechanism for avoiding costs associated with introducing new discourse referents. However, as we will see in the general discussion, the accounts make different predictions about the interpretation of the pronoun *ein(er)* in discourse.

5.3.5 Summary

This section reviewed the literature on the interpretation and processing of anaphoric quantifiers. It was argued that these quantifiers, which can receive either an elliptic/new referent or a partitive interpretation, are more often interpreted partitively in an underspecified context. I reviewed three accounts that try to explain this partitive preference. First, the account by Hendriks and de Hoop tries to explain the interpretation of quantifiers in discourse by formulating a number of ranked, soft constraints, one of which is the DOAP principle, which states that chances to anaphorize should be seized. DOAP is satisfied by a number of subprinciples whose ranking results in the observed partitive preference. Second, the Minimal Lowering account attributes the partitive preference to the subject position. Third, the New Referent account argues that the partitive preference can be explained by processing costs associated with introducing a new referent into the discourse in the elliptic interpretation.

The research on the interpretation and processing of anaphoric quantifiers is important for the research question of this chapter, as it deals with a similar phenomenon. For both anaphoric quantifiers and the indefinite pronoun *ein(er)*, we find contexts where the respective expression is ambiguous between an elliptic and a partitive interpretation, so a comparison of interpretational preferences is therefore very interesting. However, unlike in the cases discussed above, *ein(er)* is often ambiguous between not only a partitive and an elliptic interpretation, but an independent interpretation as well. As shown in Chapter 2, if the male gender is used, it can be interpreted independently with the meaning unspecified person. In the following, I will test interpretational preferences of *ein(er)* experimentally. This experiment will show whether the partitive preference observed for anaphoric quantifiers can also be found for the German indefinite pronoun *ein(er)*.

5.4 Experiment 1: Testing interpretational preferences

5.4.1 Set-up and Hypotheses

The goal of the experiment is to investigate interpretational preferences for the indefinite pronoun *ein(er)* in contexts that allow for an elliptic, a partitive and/or an independent interpretation. Following the assumptions made in section 5.2 and in Chapter 4, as well as the research on anaphoric quantifiers, I will ask whether the elliptic and the partitive interpretation of *ein(er)* behave similarly or differently when in competition with the independent interpretation and investigate whether *ein(er)* is also more likely to be interpreted partitively than elliptically if both anaphoric interpretations are available.

To answer these questions, I conducted a rating experiment. Participants read short stories (for an example, see (163)) that first introduced either a single referent using a full noun phrase (providing a possible elliptic antecedent) or a set using a quantified noun phrase (providing a possible antecedent for both an elliptic and a partitive interpretation). Afterwards, the stories introduced a referent using the indefinite pronoun *einer* that was ambiguous between a context-dependent and an independent interpretation. The stories were each followed by an alternative question that corresponded to either the partitive or the elliptic interpretation.

(163) In der Oper wurde heute Mozarts Zauberflöte aufgeführt.

a) **Ein paar Rentner** blätterten am Stehtisch in einem Programm.

b) **Ein Rentner** blätterte am Stehtisch in einem Programm.

Als die Glocke ertönte, stellte **einer** sein Glas ab und suchte seinen Platz im Saal.

‘Mozart’s ‘The Magic Flute’ was performed in the opera today. A few pensioners / a pensioner leafed through a program at the bar table. When the bell rang, one put down his glass and looked for his place in the hall.’

i) partitive: Derjenige, der sein Glas abstellt, ist eher...

einer der Rentner

ein Anderer

ii) elliptic: Derjenige, der sein Glas abstellt, ist eher...

ein Rentner

kein Rentner

‘The person putting down his glass is rather...

one of the pensioners

another person

a pensioner

no pensioner’

Participants were asked to rate the referent introduced by *einer* on a continuous scale where two options as illustrated in (164 i) and (164 ii) marked the respective endpoints. I took ratings as a reflection of their interpretational preferences. One goal of the experiment was to test the method for further experimental investigations in Chapter 6. Other than that, the experiment was designed to test the following hypotheses:

(164) **Hypothesis 1.1: anaphoric vs. independent interpretation**

Regarding interpretational preferences, the two anaphoric interpretations of *ein(er)* – partitive and elliptic – behave differently. The possibility of a partitive interpretation leads to more anaphoric interpretations of an indefinite pronoun *ein(er)* (compared to an independent interpretation) than the availability of only an elliptic interpretation.

(165) **Hypothesis 1.2 : elliptic vs. partitive interpretation**

If a context allows for both an elliptic and a partitive interpretation of an ambiguous pronoun *ein(er)*, the partitive interpretation is preferred over the elliptic one.

Hypothesis 1.1 compares a discourse context that provides an accessible set, and therefore allows for a partitive, an elliptic, and an independent interpretation of *ein(er)*, with a discourse context that only provides an accessible property, and thus only allows for an elliptic and an independent interpretation (see example (163)). It is based on the

assumptions made in Chapter 4 and section 5.2 and predicts a systematic difference in the interpretation of the indefinite pronoun between different types of discourse linking. It is argued that a partitive interpretation of the indefinite pronoun is a stronger competitor to an independent interpretation than is an elliptic one. Thus, the possibility of a partitive interpretation should lead to more anaphoric interpretations of *ein(er)* when in competition with an independent interpretation compared to a context that only allows an elliptic or an independent interpretation.

Hypothesis 1.2, then, deals with a more direct comparison of the elliptic and partitive interpretations of the indefinite pronoun *ein(er)*. It predicts a preference for a partitive over an elliptic interpretation in a discourse context that allows for both anaphoric interpretations. Hypothesis 1.2 is based on the assumptions made in section 5.2 as well as the results of the previously discussed research on anaphoric quantifiers.

5.4.2 Method

Participants

Sixty native speakers of German participated in the experiment for course credit (46 female, mean age = 22.4, SE = 5.2). The experiment was covered by an ethics protocol approved by the Deutsche Gesellschaft für Sprachwissenschaft (DGfS, German Linguistic Society).

Materials

I constructed 24 German short stories consisting of four sentences each. An example is shown in Table 14. The first sentence always provided some context or setting, such as a zoo on the weekend or a bus ride between two cities. I made sure to use settings that typically include a variety of people to make both an anaphoric and an independent interpretation, of *ein(er)* possible. The second sentence introduced a referent by proper name. This was done because a proper name does not provide conceptual material and therefore is not a possible antecedent for a subsequent pronoun *ein(er)*. The third sentence introduced either a set (condition (a) in Table 14) or a single referent (condition (b) in Table 14) in subject position with a descriptive noun phrase, thus providing a possible antecedent for an elliptic interpretation and, in the case of a set, also a partitive antecedent. The fourth sentence, then, described a subsequent event, and included the indefinite pronoun *einer* as the subject. I only used the masculine form, as the independent interpretation of *ein(er)* is more restricted for the other genders.

S1	In der Oper wurde heute Mozarts Zauberflöte aufgeführt. <i>Mozart's 'The Magic Flute' was performed in the opera today.</i>	
S2	Claudius schaute sich interessiert im Foyer um. <i>Claudius looked around the foyer with interest.</i>	
S3	a) Ein paar Rentner blätterten <i>A few pensioners leafed</i>	am Stehtisch in einem Programm. <i>through a program at the bar table.</i>
	b) Ein Rentner blätterte <i>A pensioner leafed</i>	
S4	Als die Glocke ertönte, stellte einer sein Glas ab und suchte seinen Platz im Saal. <i>When the bell rang, one put down his glass and looked for his place in the hall.</i>	

Table 14: Example item from Experiment 1.

Importantly, the indefinite pronoun in sentence four was ambiguous between an independent and an anaphoric interpretation. Thus, in the set condition, *einer* was ambiguous between a partitive (i.e., *one of the pensioners*), an elliptic (*a (different) pensioner*), and an independent interpretation (*someone*). In the single referent condition, there was no partitive interpretation available and *einer* was therefore only ambiguous between a simple elliptic and an independent interpretation.

For each item, I formulated a matching alternative question that asked about the referent that was mentioned in the fourth sentence with the indefinite pronoun *einer*. An example is given in Table 15. I formulated two question types: a partitive question and an elliptic question. For both, the two alternatives that were given correlated with the nominal of the noun phrase in sentence three. The partitive question asked whether the referent introduced by *einer* referred to a member of the mentioned set (i.e., *a few pensioners*) or was a different individual, while the elliptic question asked whether the referent had the same characteristic given by the nominal (i.e., *a pensioner*) or not. All experimental items can be found in Appendix B.

	Derjenige, der das Glas abstellt, ist eher ... <i>The person that puts down his glass is rather ...</i>		
Partitive question	... einer der Rentner <i>... one of the pensioners</i>	oder <i>or</i>	eine andere Person? <i>another person?</i>
Elliptic question	... ein Rentner <i>... a pensioner</i>	oder <i>or</i>	kein Rentner? <i>no pensioner?</i>

Table 15: Example questions for Experiment 1.

The experiment had three conditions. I varied both the factors ‘set availability’ and ‘question type’ on two levels. The factor ‘set availability’ always concerned the referent that was introduced in the third sentence in subject position. It distinguished between referents

that introduced a set into the discourse via a quantifier or numeral (*a few pensioners*) and referents that only introduced a single referent into the discourse via an indefinite noun phrase (*a pensioner*). For the factor ‘question type’, I varied between a partitive question that asked whether the critical referent was part of the set introduced in the third sentence and an elliptic question that asked whether the referent belonged to the nominal characteristic that was the possible antecedent. I did not conduct a proper 2x2 design but only tested the following three conditions: set accessible/partitive question, set accessible/elliptic question, and set non-accessible/elliptic question. This was done because the fourth combination, set non-accessible (*a pensioner*) and partitive question (*one of the pensioners*), cannot be answered meaningfully, because a partitive question carries the presupposition that there is a suitable set established in the discourse (more than one member).

Table 16 gives an overview of the different experimental conditions and which interpretations of *einer* the alternative answers correspond to. If a set is accessible in the context, a positive answer to the partitive question would imply a partitive interpretation of the reader, whereas a negative answer could signify either an independent interpretation or an elliptic interpretation. For the elliptic question, however, partitive and elliptic interpretations pattern together with the positive answer. This is because the partitive interpretation (i.e., being one of the pensioners) also implies that the referent belongs to the nominal characteristic of the antecedent (one of the pensioners is also a pensioner). The negative answer to the elliptic question should be chosen if listeners have an independent interpretation of the indefinite pronoun. In the condition ‘set non-accessible’ we only have one question type, as a partitive interpretation is not possible in such a context. In this case, the positive answer would correspond to an elliptic interpretation, the negative answer to an independent interpretation of the indefinite pronoun *einer*.

Set accessible <i>A few pensioners (...) one put down his glass (...)</i>	
partitive question	<i>one of the pensioners</i> <i>another person</i>
	PARTITIVE READING ELLIPTIC + INDEPENDENT READING
elliptic question	<i>a pensioner</i> <i>no pensioner</i>
	PARTITIVE + ELLIPTIC READING INDEPENDENT READING
Set non-accessible <i>A pensioner (...) one put down his glass (...)</i>	
elliptic question	<i>a pensioner</i> <i>no pensioner</i>
	ELLIPTIC READING INDEPENDENT READING

Table 16: Overview of conditions and interpretations in Experiment 1.

In addition to the experimental material, I also constructed 36 filler stories that were very similar in structure to the experimental stories. Filler stories consisted of a sentence introducing the setting and a second sentence introducing a human referent by proper name. The third sentence always included a set or a descriptive noun phrase, and the fourth sentence mentioned a new referent. However, unlike their experimental counterparts, filler items did not include the indefinite pronoun *ein(er)* and did not evoke any referential ambiguity. The purpose of the filler stories was to encourage participants to use the full provided scale in their responses. Half of the fillers had an elliptic question, the other half a partitive question. Fillers of the type ‘group’ were designed to yield high ratings, as the referent in the fourth sentence was always part of the set or characteristic that was asked about. Fillers of the type ‘other’ was designed yield low ratings, as the referent did not belong to a mentioned set or characteristic. Those of the type ‘medium’ were designed to trigger responses ranging more in the middle of the scale. There were thus six types of fillers, in a 2x3 design. Examples of the different filler types can be found below in Table 17.

All materials were distributed across three presentation lists in a way that all experimental stories appeared in all conditions and no story appeared twice within a list¹². In other words, each list contained 24 experimental items, with eight items per condition, and 36 filler items.

Procedure

The experiment was done in Qualtrics (www.qualtrics.com). Participants received a link to the study via mail. They were then first informed about their personal rights and data protection. After answering some personal questions (gender, age, and mother tongue) they were informed about the task of the experiment. Participants were told that they were going to read small texts that could be the beginning of a longer story, and then would have to give their opinion about a person in each story by using a slider. While they were encouraged to use the full range of the slider, they were asked not to think too long about their answer or the exact position of the slider and to trust their intuition during the experiment. During the experiment, items were presented one by one. Below the story text,

¹² While programing the experiment, the wrong experimental text was used for item 32. This item therefore appeared twice for the condition set accessible/elliptic question, once for the condition set accessible/partitive question, but not for the condition set non-accessible/elliptic question. Before analyzing the data, the coding was updated so that it matched the text participants actually saw.

participants saw a slider that was labeled with the respective alternative question (see Figure 5).

Condition: filler type 'group', partitive question - Context: circus	
... Die Artisten kamen nochmal in die Manege und verbeugten sich. Weil die Scheinwerfer blendeten, hielt der Seiltänzer sich eine Hand vor die Augen. Derjenige, der eine Hand vor die Augen hält, ist eher ... einer der Artisten / eine andere Person	... The performers came back into the ring. Because the lights were blinding, the tightrope walker held his hand in front of the eyes. The one with his hand in front of his eyes is more likely... one of the artists / another person
Condition: filler type 'group', elliptic question - Context: flight	
... Ein Geschäftsmann packte seinen Laptop aus. Als die Reishöhe erreicht war, begann eine Flugbegleiterin mit dem Getränkeservice. Diejenige, die mit dem Getränkeservice beginnt, ist eher ... eine Stewardess / keine Stewardess	... A businessman unpacked his laptop. When the flight level was reached, a flight attendant started the beverage service. The one who starts the beverage service is more likely... a stewardess / no stewardess
Condition: filler type 'other', partitive question - Context: fight	
... Die Trainer gaben letzte Anweisungen. Als die imposante Lichtshow begann, setzte ein Boxer eine drohende Miene auf. Derjenige, der eine drohende Miene aufsetzt, ist eher ... einer der Trainer / ein anderer Anwesender	... The coaches gave final instructions. As the impressive light show began, one boxer put on a threatening face. The one who puts on a threatening face is more likely... one of the trainers / another person
Condition: filler type 'other', elliptic question - Context: flea market	
... Ein Student suchte nach neuen Möbeln. Weil an der Kommode ein kleiner Kratzer war, versuchte der Student einen guten Preis auszuhandeln. Derjenige, der einen guten Preis will, ist eher ... ein Manager / kein Manager	... A student was looking for furniture. Because there was a small scratch on the dresser, the student tried to negotiate a good price. The one who wants a good price is more likely... a manager / no manager
Condition: filler type 'medium', partitive question - Context: supermarket	
... Die Schlange an der Kasse war endlos lang. Als ein schriller Alarm losging, hielt sich ein Stylist mit beiden Händen fest die Ohren zu. Derjenige, der sich die Ohren zuhält, ist eher... einer der Wartenden / eine andere Person	... The queue at the cash register was endless. When a shrill alarm went off, a stylist held both hands firmly over his ears. The one who covers his ears is more likely... one of the waiting people / another person
Condition: filler type 'medium', elliptic question - Context: Munich Oktoberfest	
... Eine Gruppe amerikanische Touristen tanzte auf den Bierbänken. Als die Hitze unerträglich wurde, ging Jan zum nahegelegenen Ausgang und ... Derjenige, der zum Ausgang geht, ist eher ... ein Münchner / kein Münchner	... A group of American tourists danced on the beer benches. When the heat became unbearable, Jan went to the nearby exit and... The one who goes to the exit is more likely... a Munich resident / not a Munich resident

Table 17: Example fillers for Experiment 1.

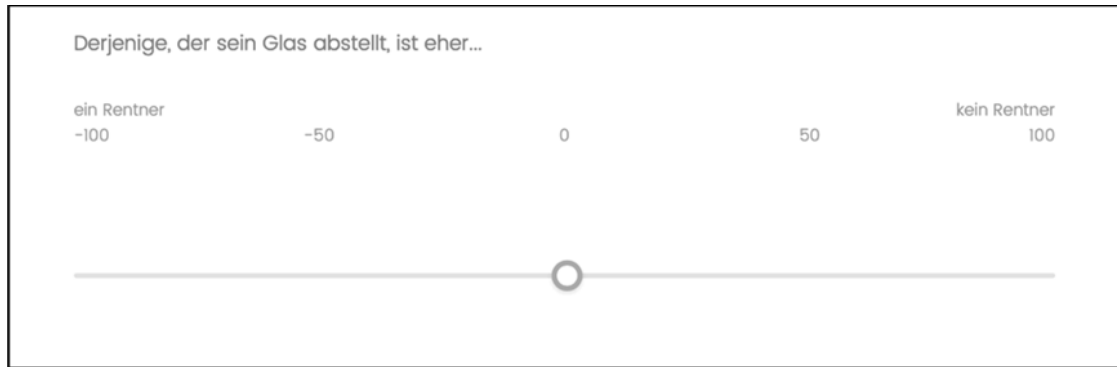


Figure 5: Example visual display in Experiment 1.

I choose to use a slider instead of a likert scale or forced choice design in order to give the participants a wide range of possible answers, hoping that this would allow me to make a more fine-grained measurement of participants' interpretational preferences. Also, because I used items with up to three different possible interpretations, this allowed the possibility of capturing influences of the second most possible interpretation, whereas if participants had only had to choose one answer, this might not have been visible. The matching question was presented above the slider, with the positive answer (part of the set, characteristic) always presented on the left and the negative answer (not part of the set, characteristic) always on the right. This was done because the negative answer for the partitive question (another person) was contrastive and therefore only made sense with the positive answer coming beforehand (assuming a reading direction from left to right).

Participants received course credit for taking part in the experiment. Therefore, they received a code at the end of the experiment, which they had to upload for course credit. Participation in the experiment was voluntarily, as students could also choose an alternative task to receive the same course credit.

Analytic plan

All analyses were conducted in RStudio (R version 3.4.0), using the tidyverse environment (version 1.2.1) and the lme4 package (version 1.1-17). I set slider positions as ratings ranging from -100 to 100 and took these to reflect how participants interpreted the pronoun.

To conduct the statistical analysis, I first formed three separate data sets. Data set 1 only included data from the items where a set was accessible (excluding the condition set non-accessible/elliptic question). This data set served to test for differences based on

question type in a context that allows all three discussed interpretations. The second set only included items that were followed by an elliptic question and served to test differences based on context type while keeping the question type fixed. The third data set was comprised of items of the conditions ‘set accessible/partitive question’ as well as ‘set non-accessible/elliptic question’. This set was formed to compare the condition where low ratings reflected only the partitive interpretation with the condition where low ratings reflected only the elliptic interpretation. An overview of the different data sets can be found in Table 18.

	Conditions	Example	Low ratings	High ratings
Data set 1	Set accessible/ partitive question	<i>A few pensioners ... one of the pensioners/another person</i>	Partitive	Elliptic or Independent
	Set accessible/ elliptic question	<i>A few pensioners ... a pensioners/no pensioner</i>	Partitive or Elliptic	Independent
Data set 2	Set accessible/ elliptic question	<i>A few pensioners ... a pensioners/no pensioner</i>	Partitive or Elliptic	Independent
	Set non-accessible/ elliptic question	<i>A pensioner ... a pensioners/no pensioner</i>	Elliptic	Independent
Data set 3	Set accessible/ partitive question	<i>A few pensioners ... one of the pensioner/another person</i>	Partitive	Elliptic or Independent
	Set non-accessible/ elliptic question	<i>A pensioner ... a pensioners/no pensioner</i>	Elliptic	Independent

Table 18: Different data sets in Experiment 1.

For each data set, I fitted a linear mixed effects model with the ratings as the dependent variable. As independent variable, for data set 1 I took ‘question type’ and for the other two data sets I took ‘set’. The models included random intercepts as well as random slopes for both participants and items. I will assume any absolute t -value of 2 or higher to indicate statistical reliability (Baayen, 2008; Gelman & Hill, 2007).

Based on Hypothesis 1.2 formulated above, I predict a preference for a partitive interpretation of *einer* over an elliptic interpretation in a context that allows for both interpretations. Thus, in data set 1, which always allows for both a partitive and an elliptic interpretation, I expect no significant effect of question type. If there is no clear preference for a partitive interpretation of *einer* over an elliptic one, I predict an effect of question type in this data set, with lower ratings for the elliptic question condition. This is because, as

Table 18 shows, an elliptic interpretation yields low ratings for the elliptic question but high ratings for the partitive question.

For Hypothesis 1.1, which focuses on the different types of anaphoric interpretations compared to an independent interpretation, I predict a significant difference in data set 3, with lower ratings for the condition ‘set accessible/partitive question’, which represents the partitive interpretation (compared to the independent and the elliptic one), than for the condition ‘set non-accessible/elliptic question’, which represents the elliptic interpretation (compared to the independent one). If, as assumed, there is no significant difference in data set 1, we should furthermore find the same effect in data set 2, which mainly serves as a control for the possibility that the effect in data set 3 is based on a different interpretation of *einer* and not on a difference in question type. However, this control is only valid if we, as predicted, do not find a significant effect in data set 1.

5.4.3 Results

Filler

Sixty participants provided data for analysis. To make sure participants actually read and understand the items and task, I first checked for their mean ratings in the different filler categories. I excluded participants that did not have both a mean positive value for the filler type ‘other’ and a mean negative value for the filler type ‘group’. Furthermore, I excluded participants whose value for the category ‘medium’ were not between their values for ‘group’ and ‘other’. For example, a participant that gave a mean rating of 25 for the filler type ‘other’ and -25 for ‘group’ was only included if he or she rated the filler type ‘medium’ higher than -25 but lower than 25. I followed this procedure for both question types separately. Due to these criteria, 8 participants had to be excluded from the data analysis.

Mean ratings for the different filler types of the remaining 52 participants can be seen in Table 19. As expected, mean ratings for the filler type ‘group’ were low, for the filler type ‘other’ were high, and for filler of the type ‘medium’ were close to zero and thus between those for ‘group’ and ‘other’. Also, as expected, I did not see a great difference between question types. I took the results for the filler items as evidence that the overall design worked as expected and the participants understood the task as intended.

Filler Type	Partitive question	Elliptic question
group	-74.7	-78.1
medium	5.20	7.67
other	82.3	84.4

Table 19: Mean filler ratings in Experiment 1.

Critical Items

Mean ratings for the critical items are summarized in Table 20 and plotted in Figure 6. Results of the inferential statistics are summarized in Table 21.

As Figure 6 shows, mean ratings for data set 1, which only includes items within the condition set accessible (i.e., the two lower conditions in the graph), are rather low, with a mean rating of -30.9 for the elliptic question and a mean rating of -33.1 for the partitive question. The difference between both questions seems minimal. We see a difference between conditions, however, in data sets 2 and 3. In data set 2, which only includes items that were followed by an elliptic question (i.e., the two high conditions in the graph), items that made a set accessible were overall rated lower, at -30.9, than items that only introduced single referents, with a mean rating of 22.0. The same difference can be found in data set 3, which includes items with the condition ‘set accessible/partitive question’ and ‘set non-accessible/elliptic question’ (i.e., the two outer conditions in Figure 6). With -33.1 for the partitive case and 22.0 for the elliptic case, mean ratings are much lower for the partitive case.

Set	Question	Mean
accessible	elliptic	-30.9
accessible	partitive	-33.1
non-accessible	elliptic	22.0

Table 20: Mean ratings of critical items in Experiment 1.

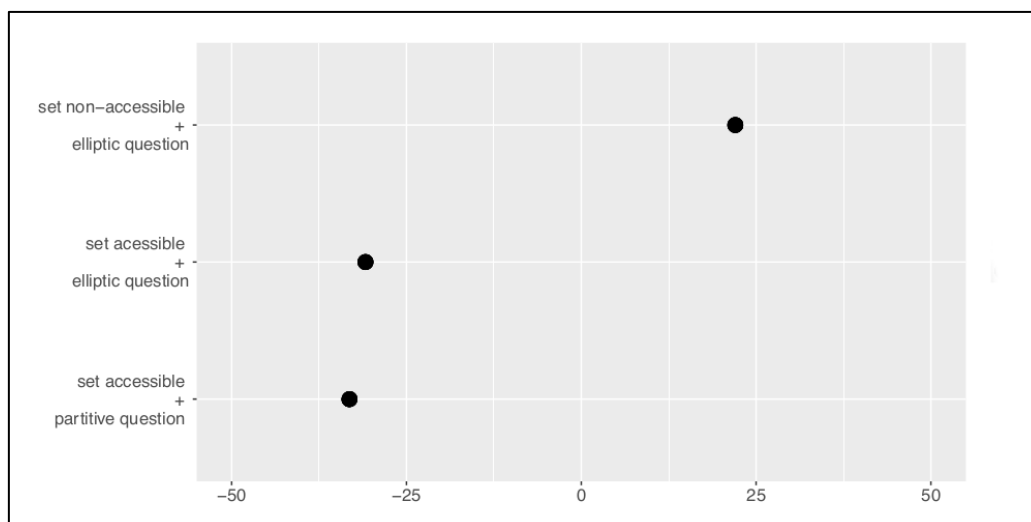


Figure 6: Visual display of mean ratings of critical items in Experiment 1.

Results of the regression models confirm these observations. For data sets 2 and 3, we find a significant main effect, with a significant difference in ratings for the factor ‘set availability’, with lower ratings if a set is accessible in the context (for data set 2: $\beta=49.839$, $SE=8.173$, $t=6.098$; for data set 3: $\beta=54.868$, $SE=8.549$, $t=6.418$). For data set 1, however, we do not find a significant main effect of set availability ($\beta=-5.169$, $SE=5.092$, $t=-1.015$).

Main Effect	β	Std. Error	t-value
Data set 1: only set accessible			
Intercept	-28.500	7.293	-3.908
Question type	-5.169	5.092	-1.015
Data set 2: only elliptic question			
Intercept	-28.174	7.519	-3.747
set availability	49.839	8.173	6.098
Data set 3: set accessible + partitive question and set non-accessible + elliptic question			
Intercept	-32.949	6.769	-4.867
set availability'	54.868	8.549	6.418

Table 21: Results of the statistical analysis of Experiment 1.

5.4.4 Discussion

The analysis revealed no significant difference in ratings for question type in the data set that included the conditions where a set was accessible in the context. This means that if a partitive interpretation of the indefinite pronoun *einer* is possible, the question type did not seem to make a difference in the participants' ratings. Because the partitive

interpretation always implies that the elliptic question is also true (one of the pensioners is always a pensioner), this is expected if the partitive interpretation is the overall preferred interpretation. If the partitive question type had been rated significantly lower than the elliptic question type, this would have implied a malfunction of the design, but this was not the case. It furthermore shows that an elliptic interpretation that introduces a new discourse referent did not seem to play a role in this discourse context. If it were to do so, we would expect to see lower ratings for the elliptic question type than for the partitive question type. Overall, we can state that in a tested discourse context that allowed for a partitive interpretation of *ein(er)*, the elliptic interpretation was neglectable. For further interpretation of the results, we can therefore modify Table 16 from the method section (i.e., eliminating the elliptic interpretation if a set is accessible), as can be seen below as Table 22.

This result furthermore confirms Hypothesis 1.2: if an ambiguous indefinite pronoun *ein(er)* allows for both an elliptic and a partitive interpretation, a partitive reading is preferred over an elliptic one. Furthermore, the mean ratings point towards a preference for the partitive interpretation over the independent interpretation, as mean ratings are below zero as well as below the mean rating for the filler type ‘other’.

Set accessible <i>A few pensioners (...) one put down his glass (...)</i>	
partitive question	<i>one of the pensioners</i> <i>another person</i>
	PARTITIVE READING INDEPENDENT READING
elliptic question	<i>a pensioner</i> <i>no pensioner</i>
	PARTITIVE READING INDEPENDENT READING
Set non-accessible <i>A pensioner (...) one put down his glass (...)</i>	
elliptic question	<i>a pensioner</i> <i>no pensioner</i>
	ELLIPTIC READING INDEPENDENT READING

Table 22: Modified overview of conditions and interpretation in Experiment 1.

For the evaluation of Hypothesis 1.1, we have two measures available: data set 2 and data set 3. Data set 3, which includes the condition ‘set accessible/partitive question’ as well as the condition ‘set non-accessible/elliptic question’ gives the most direct reflection of a partitive vs. an elliptic interpretation of the indefinite pronoun *ein(er)*. However, as this data set not only varies the availability of a partitive interpretation, but also the type of question, it seems possible that potential differences appear due to question type (for example, a partitive question may be somehow harder, or an elliptic question may not give

the same clear-cut distinction between different readings; see also the limitations section below). Therefore, I included data set 2 in the analysis, which only varies the availability of a partitive reading but keeps the question type fixed. However, the elliptic question shows a partitive interpretation only through implication (one of the pensioners is also a pensioner).

Luckily, we find the same significant effect in both data sets, with lower ratings for the condition where a set is accessible in the context. That means that if a partitive interpretation is possible, participants rate a context-dependent interpretation as more likely compared to when only an elliptic interpretation is possible. This then confirms Hypothesis 1.1: the possibility of a partitive interpretation leads to more context-dependent interpretations of an indefinite pronoun *ein(er)* (compared to an independent reading) than the possibility of only an elliptic interpretation.

5.5 General Discussion

In the previous section, I presented my rating experiment on the interpretation of an ambiguous pronoun *einer*, comparing examples where *einer* was ambiguous between an elliptic, a partitive, and an independent interpretation with examples where it was only ambiguous between an elliptic and an independent interpretation. In the following, I will discuss how the obtained results met the goals of the experiment and whether they confirmed my hypotheses. Furthermore, I will link the results to the assumptions made in section 5.2 and the research on the interpretation of anaphoric quantifiers.

One goal of the experiment was to test an experimental design that gives a fine-grained measurement of how readers interpret an ambiguous pronoun *ein(er)*. This goal was successfully reached. The results for the filler items in particular illustrated that the method worked. I will therefore use a similar design for further experimental investigations on the interpretation of an ambiguous pronoun *ein(er)* in Chapter 6.

Results showed that *ein(er)* was significantly more often interpreted anaphorically if the context allowed for a partitive interpretation. The results thus confirmed Hypothesis 1.1, repeated below. If a partitive interpretation was available, the results furthermore showed no effect of question type. This shows that the elliptic interpretation was not a relevant factor in such examples, and the results thus furthermore confirm Hypothesis 1.2.

(166) **Hypothesis 1.1: anaphoric vs. independent interpretation**

Regarding interpretational preferences, the two anaphoric interpretations of *ein(er)* – partitive and elliptic – behave differently. The possibility of a partitive interpretation leads to more anaphoric interpretations of an indefinite pronoun *ein(er)* (compared to an independent interpretation) than the availability of only an elliptic interpretation.

(167) **Hypothesis 1.2: elliptic vs. partitive interpretation**

If a context allows for both an elliptic and a partitive interpretation of an ambiguous pronoun *ein(er)*, the partitive interpretation is preferred over the elliptic one.

The results are furthermore in line with the results of the research on anaphoric quantifiers, as I observed a similar partitive preference. In the following, I want to argue that the interpretation of *ein(er)* can give additional evidence for the New Referent over the DOAP account because of the additional independent interpretation and different patterns in discourse properties. Recall that in the DOAP account, anaphoric linking is in general preferred, with the partitive preference resulting from a particular ranking of different constraints, while in the New Referent account, processing costs for brand-new referents explain the observed partitive preference.

The three different interpretations of *ein(er)* discussed in this chapter pattern differently together with regard to whether they are anaphoric and whether they refer to a (weakly) familiar referent in the discourse. For anaphoricity, the partitive and the elliptic interpretation pattern together, with their interpretation being dependent on contextual information, while the interpretation of the independent *ein(er)* does not rely on such information. However, when it comes to the familiarity of the referent *ein(er)* refers to, the elliptic and the independent interpretation pattern together, as both introduce a new referent into the discourse. The partitive interpretation of *ein(er)*, on the other hand, refers back to a set and *ein(er)* is therefore weakly familiar (for an overview, see Table 23).

	Context-dependent	Familiar referent
Partitive	✓	✓
Elliptic	✓	✗
Independent	✗	✗

Table 23: Discourse semantic properties of the indefinite pronoun *ein(er)*.

In the experiment, I compared interpretational preferences in examples that also allowed for a partitive interpretation with those in examples that only allowed for an elliptic or independent interpretation. Under the assumptions made by Hendriks and de Hoop, we would not expect a difference in strength of preference between the two types of examples, with both types preferring an anaphoric interpretation. This is because in their account, the interpretation of a syntactically well-formed structure is in principle free. Each expression gives rise to a set of possible interpretations, which is then reduced by the application of constraints, yielding an optimal interpretation in the respective context. For the interpretation of *ein(er)*, this means that because in both discussed contexts DOAP is satisfied, the strength of preference for a partitive interpretation if a set is accessible in the context should be the same as that for an elliptic preference in a context where no set is accessible. In other words, in the DOAP account, the independent interpretation of an indefinite *ein(er)* would only arise as a last resort, if other interpretations are blocked by higher ranked principles.

Importantly, however, the New Referent hypothesis predicts a difference in strength between the interpretational preferences in both contexts. As this account only predicts a clear preference if a partitive interpretation is possible, and processing costs for both possible interpretations in the context where a set is not accessible, we expect that the preference for a partitive interpretation is greater in strength than a possible elliptic or independent preference in a context where a partitive interpretation is not possible.

The results of the experiment are therefore only compatible with the predictions of the New Referent account. Under this assumption, there are no interpretational preferences for an elliptic over an independent interpretation of the indefinite pronoun *ein(er)*, as in both cases a new referent has to be established in the discourse model. These two interpretations then differ from the partitive interpretation, where the new referent is at least somehow present in the current discourse model (i.e., weakly familiar). The New Referent account therefore correctly predicts the observed difference between a partitive and an elliptic interpretation of the indefinite pronoun *ein(er)*.

With these results, the experiment demonstrates the importance of test cases like the indefinite pronoun *ein(er)* for evaluating discourse linking principles like DOAP. It shows that if a linguistic expression provides an interpretational non-anaphoric or independent alternative, an overall preference for anaphoric interpretations is less convincing. It furthermore illustrates the importance of differentiating different types of discourse linking. In the experiment, this was shown by the significant difference between ratings for the

partitive and the elliptic interpretation of *ein(er)* as well as the mean rating numbers in the elliptic case, where ratings were above zero. This even suggests a preference for an independent interpretation of the indefinite pronoun *ein(er)* in this case, at least in the formulated contexts (see, however, the limitations outlined below).

Limitations of the study

While the experiment helped to shed light on the research questions in this dissertation, it has some limitations. First of all, it is not entirely clear how the elliptic question relates to the independent interpretation. To make this point clear, consider reading only the first and the last sentence of the experimental example item discussed in the method section, as shown in (168).

- (168) In der Oper wurde heute Mozarts Zauberflöte aufgeführt. Als die Glocke ertönte, stellte **einer** sein Glas ab und suchte seinen Platz im Saal.
‘Mozart’s ‘The Magic Flute’ was performed in the opera today. When the bell rang, one put down his glass and looked for his place in the hall.’

Example (168) now only allows for an independent interpretation, as there is no potential antecedent for an elliptic or partitive interpretation of the indefinite pronoun *einer* (recall that in the original stimuli this was either *a pensioner* or *a few pensioners*). However, while a negative answer to the elliptic question in the experiment (*is the respective person a pensioner?*) clearly corresponds to the independent interpretation, it does seem in principle possible for an independently interpreted *einer* to refer to a pensioner as well (because a pensioner is not an uncommon person to be at the opera).

This effect, however, should not vary between the tested conditions ‘set accessible’ and ‘set non-accessible’, and should therefore not affect the discussed results. Furthermore, if participants interpreted the indefinite pronoun *einer* as independent, but through contextual knowledge still chose the positive elliptic answer as rather likely, we should find overall lower ratings for the question type ‘elliptic’ in the condition ‘set accessible’ than for the question type ‘partitive’. This, however, was not the case. While I did not find a significant difference between question types in the condition ‘set accessible’, absolute numbers even point in the opposite direction (with a mean rating of -33.1 for the partitive and -30.9 for the elliptic question). This, however, makes one thing clear: the overall meaningfulness of the absolute values that participants chose on the scale has to be taken with a grain of salt.

This is further emphasized by the next limitation of the study. I tried to make sure in the experiment that in all the contexts, the pronoun *ein(er)* was ambiguous between an elliptic, partitive, and independent interpretation. However, there might be factors such as discourse structure, grammatical role of the pronoun or its antecedent, or even world knowledge that influence interpretations as well. While I tried to keep those factors constant for all conditions in the experiment, there is a big body of literature on the influence of such factors on the interpretation of personal and demonstrative pronouns. The next chapter tries to tackle this question, looking closer at the influence of the factor grammatical role on the interpretation of an ambiguous pronoun *ein(er)*.

5.6 Summary

This chapter has discussed examples where an indefinite pronoun *ein(er)* is ambiguous between an elliptic, a partitive, and an independent interpretation. The goal thereby has been to show how different types of discourse linking are reflected in interpretational preferences of the reader.

Section 5.2 first looked at requirements of the individual interpretations of *ein(er)* and underspecified contexts where multiple interpretations of the pronoun are possible. Based on the assumptions made in Chapter 4, I assumed that the elliptic interpretation makes reference to a more superficial linguistic structure, while the partitive interpretation makes reference to the discourse model and therefore satisfies principles such as discourse continuity. Focusing on these discourse properties, it was hypothesized that the type of anaphoric linking affects interpretational preferences.

In section 5.3, I reviewed the research on the interpretation and processing of anaphoric quantifiers. Anaphoric quantifiers share a similar ambiguity of anaphoric interpretations to that of the indefinite pronoun *ein(er)*. However, for them, there is no independent interpretation available (or it is at least much more restricted). The review showed an overall partitive preference in interpretations and presented three different accounts to explain this observation: the DOAP account assumes a general principle that readers should maximize anaphoric interpretations if possible; the Minimal Lowering account relates interpretations to the syntactic structure; and the New Referent account links the partitive preference to processing costs.

Section 5.4 presented the design, procedure, and results of an experimental rating study on interpretational preferences of an ambiguous pronoun *ein(er)* that showed first,

when anaphoric interpretations are compared to the independent interpretation of *ein(er)*, the partitive interpretation is a stronger competitor than the elliptic one (i.e., its availability yields more anaphoric interpretations), and second, if both anaphoric interpretations are available, readers prefer a partitive interpretation over an elliptic one. The results of the experiment were then further analyzed in the general discussion, which linked them to the considerations made in section 5.2 and the research on anaphoric quantifiers, and furthermore discussed some limitations and open questions.

All in all, Chapter 5 has highlighted how different types of discourse linking relate to principles of discourse, testing their effects on the interpretation of the indefinite pronoun *ein(er)*. However, there are multiple probable factors that affect the interpretation of *ein(er)* that have so far been neglected. The next chapter will therefore pick up this question and take a look at the influence of the factor grammatical role, presenting two experimental studies: one focusing on the elliptic interpretation of *ein(er)* and one on the partitive interpretation.

6 How grammatical role influences the interpretation of the indefinite pronoun *ein(er)*

6.1 Introduction

As pronominal expressions contain only limited conceptual information, their referents are often not fully specified, and listeners often have to make a (unconscious) decision regarding how to interpret a pronoun in the relevant context. Still, interpreters do not seem to have a lot of problems with this task, and using pronouns in a sentence has even been shown to facilitate processing. This raises the question of which factors guide the interpretation of ambiguous pronominal expressions and has sparked a huge body of research which shows that the interpretation of ambiguous pronouns is guided by a number of factors, including, among others, morphological marking, syntactic prominence, semantic properties, and discourse structure. In this chapter, I will focus on one particular factor, namely grammatical role.

In particular, the research on the interpretation of ambiguous personal pronouns has shown effects of the factor grammatical role, with pronouns being more likely to be interpreted as referring to an antecedent in subject than in object position or to an antecedent in a parallel grammatical role. The goal of this chapter therefore is to ask whether the interpretation of *ein(er)* is influenced by the factor grammatical role in a way similar to that shown for definite pronouns. The examples in (169) illustrate how such an influence could look like. In (169), *einer* in the second sentence could be interpreted partitively (but also, for example, independently), as there is a set referent (*the three professors*) in the discourse that can serve as an antecedent for such a partitive interpretation. We can now ask whether a partitive interpretation is more likely if the potential antecedent occurs in subject position, as shown in (169a), or object position (see (169b)). Similarly, we could ask whether a partitive interpretation becomes more likely if the potential antecedent is in a parallel grammatical role to the pronoun, as in (169a), than if it is in a non-parallel role, as in (169b).

- (169) a. Auf dem Campusgelände standen drei Professoren. Nach einer Weile hat mich **einer** angesprochen.

*'There were three professors standing on the campus grounds. After a while, **one** approached me.'*

- b. Auf dem Campusgelände habe ich drei Professoren beobachtet. Nach einer Weile hat mich **einer** angesprochen.

*'On the campus grounds, I watched three professors. After a while, **one** approached me.'*

In this chapter, my main hypothesis will be that effects of grammatical role on the partitive interpretation of *ein(er)* pattern with effects found for the interpretation of ambiguous personal pronouns, while effects of grammatical role on the elliptic interpretation pattern with effects found for the interpretation of different ellipsis phenomena. I present two experimental rating studies that support this main hypothesis. The experiments furthermore show that the independent interpretation of an indefinite pronoun *ein(er)* is influenced by morphological marking.

In the remainder of this chapter, I will first review the literature that investigates effects of grammatical role on the interpretation of anaphoric phenomena, focusing on personal and other definite pronouns, ellipsis phenomena and anaphoric quantifiers. Then, building on these insights, section 6.3 will formulate testable predictions for the interpretation of an ambiguous pronoun *ein(er)*, and will propose testing two different context types. Sections 6.4 and 6.5 will present the conducted rating experiments, with the former contrasting the elliptic with the independent interpretation of *ein(er)* and the latter contrasting the partitive with the elliptic and independent interpretation. The general discussion in section 6.6 will then compare the results and link them to the assumptions and results of the previous chapters. Chapter 6 will end with a short summary.

6.2 Effects of grammatical role on the interpretation of anaphoric expressions

6.2.1 The interpretation of personal and other definite pronouns

The goal of section 6.2 is to review the literature that investigates effects of grammatical role on the interpretation of anaphoric expressions. I will start with a short summary on ambiguous personal and other definite pronouns, for which research has found an effect of position of the antecedent, with personal pronouns preferring subjects as antecedents, and an effect of grammatical role parallelism.

As personal pronouns only come with limited conceptual information such as gender, they are often ambiguous if they appear in a context with multiple discourse referents. An example is shown in (170), where *She* could refer either to Sandra or to Jill. As the resolution of pronouns can give insights into reference management and the mechanisms of linguistic processing, the question of how readers comprehend such ambiguous pronouns has become an important and highly researched field in linguistics.

(170) Yesterday, Sandra met Jill in the office. **She** told a funny story about their boss.

One main research finding is that the interpretation of an ambiguous pronouns depends on the discourse prominence of the antecedent (Jasinskaja et al., 2015; von Heusinger & Schumacher, 2019), with personal pronouns most likely referring to a prominent referent (for example, Ariel, 1990; Gundel et al., 1993; Arnold, 2010). One factor which has been argued to strongly influence the prominence of a referent is grammatical role, with subjects being more prominent than objects. Therefore, a personal pronoun tends to refer back to the subject of a preceding sentence, as has been shown in a number of studies and experiments (for example, Grosz et al., 1995; Frederiksen, 1981; Crawley et al., 1990; Arnold, 2001; Feretti et al., 2009). In example (170) above, then, this subject-assignment strategy would predict that the ambiguous pronoun refers to Sandra rather than Jill.

However, prominence of the antecedent is influenced by multiple factors, which are often linked. For example, the subject preference in English could also be due to a first-mention bias. However, research in other languages has shown that both grammatical role and order of mention influence pronoun resolution (for example, Järvikivi et al., 2005; Kaiser & Trueswell, 2011). Therefore, if other prominence-lending factors are kept constant, it seems safe to say that subject referents are more prominent than object referents and therefore more likely antecedents for ambiguous personal pronouns.

Other definite pronouns also show sensitivity with respect to the grammatical role of their antecedent. For example, German d-pronouns (*der, die, das*) disprefer subject referents as antecedents (Bosch et al., 2003; see also Schumacher et al., 2015). This is illustrated in (171), where the d-pronoun *Die* clearly prefers the object *Jill* as an antecedent. Similar observations have been made for Finnish, for which Kaiser & Trueswell (2011) show that the personal pronoun *hän* is preferably interpreted as referring to a subject, while the demonstrative pronoun *tämä* is more likely to refer to an object.

- (171) Gestern hat Sandra Jill_i im Büro getroffen. **Die**_i hat eine lustige Geschichte über ihre Chefin erzählt.
*'Yesterday, Sandra met Jill_i in the office. **She**_i told a funny story about their boss.'*

When it comes to the influence of grammatical role, multiple studies furthermore suggest that grammatical role parallelism is another factor that influences the interpretation of an ambiguous personal pronoun, such that a personal pronoun prefers an antecedent in a parallel grammatical role (for example, Sheldon, 1974; Stevenson et al., 1995; Chambers & Smyth, 1998; Sauermann & Gargarina, 2017). This phenomenon is illustrated in (172). In (172a), which is repeated from above, the pronoun *She* is in subject position, so according to the strategy of parallel grammatical role it is therefore more likely to refer to the subject of the preceding sentence, here *Sandra*. Examples like (172a) can thus not differentiate between a strategy which chooses a subject as antecedent and one which chooses an antecedent in a parallel grammatical role, as both strategies predict the subject as antecedent. In (172b), however, the pronoun appears in object position. Choosing an antecedent in a parallel grammatical role would now predict Jill as the more likely antecedent, while the subject strategy still predicts Sandra. Indeed, Jill becomes a much more likely antecedent for the pronoun in example (172b), which shows that both subjecthood of the antecedent and grammatical role parallelism effect ambiguous pronoun resolution (see also Stevenson et al., 1995).

- (172) a. Yesterday, Sandra met Jill in the office. **She** told a funny story about their boss.
 b. Yesterday, Sandra met Jill in the office. Petra met **her** for lunch.

To sum up, the interpretation of ambiguous definite pronouns has been found to be influenced by the factor grammatical role. First, grammatical role influences the prominence of an antecedent, and therefore personal pronouns seem to prefer antecedents in subject position, while demonstrative pronouns prefer non-subjects, and second, personal pronouns prefer antecedents that are in a parallel grammatical role. The next section will now look at the processing of ellipsis and ask whether similar effects of grammatical role have been found there as well.

6.2.2 The processing of ellipsis

In this dissertation, I have argued that the elliptic interpretation of *ein(er)* is due to NP-ellipsis (see Chapter 4 for more details). Unfortunately, the research on NP-ellipsis concentrates on important aspects such as licensing and identity requirements but neglects the question of what factors influence interpretation in cases of ambiguity. Therefore, in this section, I will more broadly look at the processing of ellipsis and discuss different ellipsis phenomena such as sluicing and VP-ellipsis. I will focus on two factors that have been found to influence the interpretation of ellipsis that can be linked to the factor grammatical role: locality and parallelism.

The examples below illustrate two ellipsis phenomena that show an ambiguity that relates to the grammatical role of the remnant. (173) is an example of sluicing, and the interesting question here is what the correlate for the *wh*-element (here *who*) is. The sentence could be interpreted with either the subject *somebody* as correlate (i.e., I don't know who kissed) or the object *someone* as correlate (i.e., I don't know who was kissed). Similarly, in (174), which shows let-alone ellipsis, the remnant *the dean* could be contrasted with either the subject *the professor* (the dean also doesn't understand the student) or the object *the student* (the professor also doesn't understand the dean).

(173) Apparently at the party, somebody kissed someone, but I don't know who.

(174) The professor didn't understand the student, let alone the dean.

Overall, research on ambiguous ellipsis phenomena has shown a locality bias (for example, Frazier & Clifton, 1988; Carlson et al., 2009; Harris, 2015; Harris & Carlson, 2016; Harris, 2019), where the remnant is more often associated with a correlate occupying the structurally most local position. For example, Frazier and Clifton (1998) conducted a number of experiments using sluiced sentences like (175) and found for a forced choice task that the local remnant was chosen 77 % of the time. Thus, in example (175), participants were more likely to interpret *which one* as 'which exam the students will flunk' than as 'which teacher said it'.

(175) Some teacher says that the students will flunk an exam—guess which one.

Similarly, Harris (2015) conducted an eye-tracking while reading experiment where he showed participants sentences like (176). As for sluicing, the remnant is more likely to

be associated with an indefinite than a definite expression, so the most likely interpretation of (176a) is that the speaker does not know which tourists sampled the wine. Thus, the most likely correlate is the object of the first clause and therefore follows the locality bias. In (176b), however, the indefinite is in subject position, going against the locality bias. Indeed, the study by Harris (2015) showed a clear effect of locality with sentences like (176b), which go against the locality bias, eliciting longer first pass times than sentences like (176a), where the locality bias is met.

(176) a. The tourist sampled some wine, but I don't know which one.

b. Some tourists sampled the wine, but I don't know which one

The locality bias does not seem to be restricted to sluicing. For example, a similar preference is also found for let-alone ellipsis, as Harris and Carlson (2016) show on the basis of a corpus study and a self-paced reading experiment using examples like (177).

(177) a. The nurse couldn't stand the nicest patient, let alone the meanest one.

b. The nicest nurse couldn't stand the patient, let alone the meanest one.

While in (177a) the remnant is contrasted with the local object, in (177b) it is contrasted with the non-local subject. Again, the self-paced reading experiment by Harris and Carlson shows an effect of the locality bias, with sentences like (177a) eliciting faster reading times than sentences like (177b).

At least for English, which has a quite strict SVO order, the locality constraint often results in a preference for object antecedents over subject antecedents. It is thus indirectly linked with grammatical role. Although word order is freer in German, SVO order is still more common than an OVS order, so the locality bias would therefore also often predict a preference for an object over a subject antecedent.

A second factor that seems to strongly influence how ambiguous ellipsis phenomena are interpreted is parallelism. In general, ellipsis seems to favor parallel structures of all kinds, and it has been shown in a number of studies that the processing of ellipsis is influenced by parallelism (for example, Mauener et al., 1995; Frazier & Clifton, 1998; Carlson, 2002; Dickey & Bungler, 2011; Poirier et al., 2012). Parallelism effects are furthermore often linked to a coordinate structure (for example, Dickey & Bungler, 2011; Frazier et al., 2000, see discussion below in section 6.3.2).

An example that illustrates how parallelism effects the interpretation of an ambiguous elliptic structure is a study by Carlson (2002) that investigated – among other things – replacives, as shown in (178). Sentences like (178) again show ambiguity, with the replacive referring to either the subject referent (*Maude*) or the object referent (*a policeman*). However, the examples in (178) differ with respect to lexical parallelism concerning the DP type, as the remnant is either a proper name, and thus parallel with the subject, or a full indefinite noun phrase, which is lexically parallel to the object.

(178) a. Maude called a policeman for help, not Marjorie.

b. Maude called a policeman for help, not a fireman.

In her study, Carlson found a strong parallelism effect, with participants choosing a phrase as antecedent more often when it was the same DP type as the remnant, more specifically a proper name if the remnant was a proper name (*Maude* as antecedent in (178a)) and a full indefinite noun phrase if the remnant was an indefinite noun phrase (*a policeman* as antecedent in (178b)).

Parallelism effects have been found for very different types of ellipsis. For example, the processing of VP-ellipsis also seems to be influenced by parallelism in that elided clauses with a parallel structure to their antecedent are easier to process than those with non-parallel structures (for example, Dickey & Bungler, 2011). In example (179), the elided clause (‘what Nolan colored _’) contains a gap that is only present in the antecedent clause in (179b), as the verb is used intransitively in (179a). Dickey and Bungler therefore find that sentences like (179b) are easier to process than sentences like (179a).

(179) a. Nolan colored, but he wouldn’t tell me what.

b. Nolan colored something, but he wouldn’t tell me what.

In the previous section, I presented evidence that grammatical role parallelism influences the interpretation of an ambiguous personal pronoun. While I do not know of any study addressing this topic explicitly, due to how wide-spread the parallelism effect in ellipsis phenomena is, it seems reasonable to assume that the parallelism effect is also transferable to parallelism of grammatical role. For NP-ellipsis, this would mean that an ambiguous personal pronoun prefers an antecedent in a parallel grammatical role position over an antecedent in a non-parallel role.

To sum up, I have presented two effects that have been found to influence the processing of ellipsis phenomena that can be linked to grammatical role: locality and parallelism. The next section will look at the interpretation of anaphoric quantifiers, a topic that has already been addressed in detail in Chapter 5.

6.2.3 The interpretation of anaphoric quantifiers

The question of whether the grammatical role of an expression influences its interpretation has also been addressed in the research on anaphoric quantifiers (for a more detailed overview on this phenomenon, see the discussion in Chapter 5; I will keep the discussion rather short here) by Frazier (1999) and Frazier et al. (2005), who argue that the grammatical role of an anaphoric quantifier influences its interpretation.

An example of an anaphoric quantifier is shown in (180), where *Some* or *Some students* could be interpreted as referring either to a subset of the ten students introduced in the first sentence or to a different set of some (other) students. In accordance with the assumptions regarding and the labelling of the indefinite pronoun *ein(er)*, I will call the former the ‘partitive interpretation’ and the latter either the ‘elliptic interpretation’ or the ‘new set interpretation’, as (180b) does not involve ellipsis (see Chapters 4 and 5 for more information on the anaphoric interpretations of the pronoun *ein(er)* and its relationship to anaphoric quantifiers).

- (180) a. Ten students entered the classroom. **Some** talked to the teacher before class.
b. Ten students entered the classroom. **Some students** talked to the teacher before class.

Now, Frazier (1999) and Frazier et al. (2005) argue that the interpretation of anaphoric quantifiers is guided by structural factors, and that quantifiers in a VP-external position receive a partitive interpretation while quantifiers in a VP-internal position receive an elliptic or new set interpretation. Now, importantly, in canonical SVO sentences, this translates to the assumption that subjects are more likely to receive a partitive interpretation, while objects are more likely to be interpreted elliptically or as a new set. This account is supported by a number of experiments, which show a clear effect of grammatical role in the interpretation of anaphoric quantifiers (for a detailed discussion of the so-called Minimal Lowering account, see section 5.3.2).

Grammatical role is also briefly addressed in the Optimality Theory-based account of Hendriks and de Hoop (2001) regarding the interpretation of anaphoric quantifiers. In this account, it is argued that the elliptic or new set interpretation is subject to a parallelism constraint, which also subsumes the factor grammatical role. Loosely speaking, it is argued here that for the elliptic interpretation of an anaphoric quantifier, an antecedent in a parallel grammatical role is preferred (for a detailed description of this account, see section 5.3.1).

This short overview of the interpretation of anaphoric quantifiers concludes the section on the interpretation of ambiguous anaphoric expressions. Next, I will use the obtained information to formulate testable hypotheses regarding the influence of grammatical role on the interpretation of an ambiguous pronoun *ein(er)*.

6.3 Predicting the influence of grammatical role on the interpretation of *ein(er)*

6.3.1 Building hypotheses

The goal of this section is to predict the influence of grammatical role on the interpretation of an ambiguous pronoun *ein(er)* in the form of testable hypotheses. It thus serves to lay the theoretical ground for the rating experiments that will be presented in sections 6.4 and 6.5. My main hypothesis will therefore be that effects of grammatical role on the partitive interpretation of *ein(er)* pattern with effects found for the interpretation of ambiguous personal pronouns, while effects of grammatical role on the elliptic interpretation pattern with effects found for the interpretation of different ellipsis phenomena.

In Chapter 4, I argued that there are two anaphoric interpretations of the German indefinite pronoun *ein(er)* that can be differentiated both on the level of their semantic properties as well as by their underlying structure. First, in an elliptic interpretation, the pronoun *ein(er)* refers to a discourse-new referent, thus this interpretation is due to NP-ellipsis. Second, in the partitive interpretation, *ein(er)* refers to a weakly familiar referent that is in a semantic set-subset relationship with an already introduced discourse referent and involves a partitive null proform that takes a non-singular discourse referent as antecedent. For an illustration of this difference in assumed structure, see example (181).

- (181) a. Peter schaut keine Horrorfilme. Letztes Jahr hat ihn **einer Horrorfilm** total verstört.
*‘Peter doesn’t want to watch horror movies. Last year, **one horror movie** totally distressed him.’*
- b. Peter hat im letzten Jahr zwanzig Horrorfilme geschaut. **Einer davon** war einfach zu viel für ihn.
*‘Peter watched twenty horror movies last year. **One thereof** was just too much for him.’*

My argument that the elliptic interpretation of *ein(er)* is based on simple NP-ellipsis, predicts that it is also subject to constraints found in the interpretation of other ellipsis phenomena, as these constraints are not limited to a single ellipsis type but rather target multiple ellipsis phenomena. With the information presented in section 4.2.2 in the background, I therefore assume that an elliptic interpretation is more likely if the locality and parallelism biases are fulfilled. Applied to the factor grammatical role and assuming a linear sentence structure where the subject is the first-mentioned referent, I therefore formulate two hypotheses regarding the elliptic interpretation of *ein(er)*:

(182) **Hypothesis 2.1: Locality**

In an SVO structure, the indefinite pronoun *ein(er)* is more likely to be interpreted elliptically if the potential antecedent is part of the object of the preceding sentence than if it is part of the subject of the preceding sentence.

(183) **Hypothesis 2.2: Parallelism**

The indefinite pronoun *ein(er)* is more likely to be interpreted elliptically if *ein(er)* and the potential antecedent are in a parallel grammatical role than if they appear in non-parallel roles.

Hypothesis 2.2 is furthermore supported by Hendriks and de Hoop’s (2001) Optimality Theory account of the interpretation of anaphoric quantifiers (see section 4.2.3).

For the partitive interpretation of the indefinite pronoun *ein(er)*, I assume that it results from a partitive null proform. In Chapter 4, I presented evidence that this interpretation therefore refers to discourse referents on the level of the mental discourse model, which is a different type of anaphora from ellipsis. I therefore assume that the partitive interpretation patterns with the assumptions made for ambiguous personal pronouns, as they, too refer on the level of the discourse model. For the interpretation of personal pronouns, I found two main effects of grammatical role: they favor a prominent antecedent and an antecedent in a parallel grammatical role. Assuming that subject referents are more

prominent than objects referents, I thus make the following two predictions regarding the partitive interpretation of *ein(er)*:

(184) **Hypothesis 3.1: Prominence of antecedent**

The indefinite pronoun *ein(er)* is more likely to be interpreted partitively if the potential antecedent occurs in subject position than if it occurs in object position.

(185) **Hypothesis 3.2: Parallelism**

The indefinite pronoun *ein(er)* is more likely to be interpreted partitively if *ein(er)* and the potential antecedent are in parallel grammatical roles than if they occur in non-parallel roles.

Just as in Experiment 1, presented in the previous chapter, I will compare the anaphoric interpretations of *ein(er)* with the independent interpretation, which introduces an unspecified discourse-new human referent. This interpretation is non-anaphoric as it does not refer to preceding linguistic material. As the independent interpretation is most common in the male form, from now on, I will only use the male form *einer* of the investigated pronoun. An example is shown in (186).

- (186) Hörst du es? Ich glaube da kommt **einer**.
 ‘Do you hear it? I think there’s *someone* coming.’

As the independent interpretation is possible both in subject as well as in object position and furthermore does not depend on an antecedent, at this point, I do not predict any particular effects of grammatical role that would favor this interpretation.

Lastly, I want to address the research on anaphoric quantifiers. Frazier et al. (2005) predicted that quantifiers in subject position are more likely to be interpreted partitively, while quantifiers in object position are more likely to be interpreted elliptically or as a new set. As the described ambiguity as well as the experimental methods resemble my research on *ein(er)*, I make similar assumptions for the interpretation of the indefinite pronoun. In other words, with regard to an ambiguous pronoun *einer*, I formulate the following hypothesis:

(187) **Hypothesis 3.3: Subjecthood pronoun**

The indefinite pronoun *ein(er)* is more likely to be interpreted partitively if it occurs in subject position than if it occurs in object position.

Now, anaphoric quantifiers differ from the indefinite pronoun *ein(er)* in that they do not allow for an independent interpretation in the same way. However, in their study, Frazier

et al. look not only at bare anaphoric quantifiers but also at full indefinite NPs such as *three ships*. These NPs are not anaphoric as they do not refer to a linguistic element in the preceding discourse. They are interpreted as a new set and therefore resemble the independent interpretation of *ein(er)* more than the elliptic one. Thus, the assumptions by Frazier et al. would probably predict, for both the independent as well as the elliptic interpretation of *ein(er)*, that they are favored in object position. As in the upcoming experiment, the elliptic interpretation of *einer* will be compared to the independent interpretation, I will not formulate a hypothesis on the basis of Frazier et al. concerning the elliptic interpretation or a pronoun in object position.

An overview of the predicted influences of grammatical role on the interpretation of an ambiguous pronoun *einer* is given in Table 24.

Interpretation <i>ein(er)</i>	Favored by	Based on
elliptic	Object antecedent (locality)	Ellipsis processing
	Grammatical role parallelism	Ellipsis processing
partitive	Subject antecedent	Personal pronouns
	Grammatical role parallelism	Personal pronouns
	Subject position	Anaphoric quantifiers

Table 24: Overview of predicted influence of grammatical role on anaphoric interpretations of the pronoun *ein(er)*.

6.3.2 Testing different contexts

In this subsection, I will address the research question of how grammatical role influences the interpretation of the indefinite pronoun *ein(er)*, mainly using data from two rating experiments where I will use the same design as that already tested in Experiment 1 in the previous chapter. This section will discuss the types of context I will use in the experiments in a bit more detail and propose some adjustments to the experimental design from Chapter 5 for testing in a total of four different context types.

As discussed in Chapter 2, the anaphoric interpretations of *ein(er)* show certain discourse requirements, and therefore the context a pronoun *ein(er)* appears in determines whether an anaphoric interpretation is even possible. However, if requirements for more than one interpretation are fulfilled and semantics also allow for it, the pronoun can be ambiguous between different interpretations, in which case the context is underspecified. For the

upcoming experiments, I will stick to the original design from Experiment 1 and will distinguish two types of underspecified context. The first is a context that has an accessible NP but no accessible set referent, where *einer* can be interpreted elliptically or independently. As I want to compare results for the two contexts, I use single referents in the second case, which keeps other properties of the context quite similar. The second is a context that has a set or group already established as an accessible discourse referent, which allows for a partitive, an elliptic, or an independent interpretation. The difference in underspecification of the context is illustrated in example (188) below, which is one of the items from Experiment 1 (for more details also on other requirements of the individual interpretations, see Chapter 5).

- (188) In der Oper wurde heute Mozarts Zauberflöte aufgeführt. Claudius schaute sich interessiert im Foyer um.
- a. **Ein Rentner** blätterte am Stehtisch in einem Programm.
 - b. **Ein paar Rentner** blätterten am Stehtisch in einem Programm.

Als die Glocke ertönte, stellte **einer** sein Glas ab und suchte seinen Platz im Saal.

'Mozart's 'The Magic Flute' was performed in the opera today. Claudius looked around the foyer with interest. A pensioner/ A few pensioners leafed through a program at the bar table. When the bell rang, one put down his glass and looked for his place in the hall.'

While the design of Experiment 1 worked in many ways as intended, there was one shortcoming for the research question of this chapter, namely that, overall, elliptic interpretations seemed very low. They were even statistically not detectable if a partitive interpretation was also available. The goal of the upcoming experiments therefore is to create a context that favors an elliptic interpretation, and through this to achieve more variation in the interpretations of *einer*.

It has often been observed that coordinated sentences are a very stereotypical context for ellipsis (e.g., Wilder, 1997; Zamparelli, 2019). Especially if there is some kind of parallelization of the two coordinates, identical elements can be phonologically dropped. For example, in (189a) *Peter* is the subject in both clauses and therefore can be only overtly mentioned in the first one, while in (189b) the whole VP is parallel and can thus be elided. Some kinds of ellipsis are even restricted to coordinated sentences such as gapping or Left-Peripheral Deletion (for a recent overview, see Johnson, 2018; Zamparelli, 2019).

(189) a. Peter went home and ~~Peter~~ read a book.

b. Peter went home and Susan ~~went home~~ too.

As coordination is one of the most typical contexts for ellipsis, we can assume for the interpretation of an ambiguous *einer* that an elliptic interpretation is more likely if the pronoun occurs in a coordinated parallel sentence structure than if the potential antecedent and the pronoun occur in separated sentences. For the experiments, I will therefore create contexts that favor an elliptic interpretation (for short: context type ‘elliptic’) using sentences where the potential antecedent and the pronoun *einer* occur in coordinated structures with the same verb to create a strong parallelism effect. An example of the so-called context type ‘elliptic’ is shown in (190).

(190) Beim Elefantengehege hat Pia **einen Tierpfleger** erschreckt und bei den Pinguinen hat Christoph **einen** erschreckt.

*‘At the elephant enclosure Pia scared **an animal keeper** and at the penguins Christoph scared **one**.’*

In order to not only test a rather special context where any influences of grammatical role might not be generalizable, I will not only test the elliptic context type but also include a more neutral context that does not especially favor the elliptic interpretation (for short: context type ‘neutral’¹³). For this, I will use the characteristics from Experiment 1, where I found a strong partitive preference. For the context type ‘neutral’, the potential antecedent will appear in two separated/ non-coordinated sentences that also feature two different verbs. An example of this context type is shown in (191).

(191) Beim Elefantengehege hat Pia **einen Tierpfleger** erschreckt. Bei den Pinguinen hat Christoph **einen** angetippt.

*‘At the elephant enclosure Pia scared **an animal keeper** and at the penguins Christoph tapped **one**.’*

All in all, I thus want to investigate four context types. Contexts differ first in terms of underspecification, either introducing a potential single antecedent referent, where the pronoun is thus ambiguous between an elliptic and an independent interpretation, or introducing a potential set antecedent referent, where the pronoun is then ambiguous between a partitive, an elliptic, and an independent interpretation. Second, contexts differ

¹³ The term ‘neutral’ is selected especially in contrast to the elliptic context. I do, however, not exclude the possibility that in these contexts as well, there are factors favouring one interpretation. However, neutral contexts are much more general and allow for more ambiguity than the rather specific elliptic contexts.

regarding whether they favor an elliptic interpretation (coordinated sentence and verb parallelism) or not (separate sentences and different verbs). An overview of the different context types is given in Table 25. As testing all these contexts in a single experiment would result in too many experimental conditions, I will split up the design and conduct two experiments, with the first (Experiment 2) only testing contexts with a single antecedent referent and the second (Experiment 3) only testing contexts with a set antecedent.

	Elliptic context	Neutral context
Single antecedent referent (elliptic or independent)	Experiment 2	Experiment 2
Set antecedent referent (partitive, elliptic, or independent)	Experiment 3	Experiment 3

Table 25: Overview of context types in Experiments 2 and 3.

6.4 Experiment 2: Testing the elliptic interpretation of the pronoun *ein(er)*

6.4.1 Hypotheses and set up

The goal of both experiments presented in this chapter is to investigate the influence of grammatical role on the anaphoric interpretations of the German pronoun *ein(er)*. For Experiment 2, I will focus on the elliptic interpretation and compare examples with a potential single antecedent where the male form *einer* is ambiguous between an elliptic and an independent interpretation, as illustrated in (192).

- (192) Am Wochenende haben Pia und Christoph den Kölner Zoo besucht. **Ein Tierpfleger** hat Pia erschreckt. Bei den Pinguinen hat **einer** Christoph angetippt.
'At the weekend, Pia and Christoph visited the Cologne Zoo. An animal keeper scared Pia. At the penguins, one tapped Christoph.'

The indefinite pronoun in the second sentence of (192) can either be interpreted elliptically, and therefore anaphorically (i.e., as referring to a second animal keeper), or independently (i.e., as referring to an unspecified person, for example another visitor at the zoo). As there is no set referent introduced in the discourse, a partitive interpretation of *einer* is not possible in such a discourse context. The experiment was designed to test the predictions formulated in section 6.3.1.

For Experiment 2, I conducted a rating study based on that in Experiment 1 (presented in Chapter 5). Participants read short stories that consisted of four sentences. A full example can be seen in Table 26 and Table 27 in section 6.4.2. The first two sentences always introduced the general scenery, while the third sentence introduced a referent by an indefinite noun phrase that served as a possible antecedent for the indefinite pronoun *einer*, which was introduced in the fourth sentence. I varied the grammatical role of both the potential antecedent and the indefinite pronoun. Furthermore, sentences either appeared coordinated with the same verb (i.e., context type ‘elliptic’, see section 6.3.2) or non-connected with different verbs (i.e., context type ‘neutral’). Each story was followed by an alternative question that asked participants to rate the referent introduced by *einer* on a continuous scale.

The experiment was designed to test the following hypotheses:

(193) **Hypothesis 2.1: Locality**

Given an SVO structure, the indefinite pronoun *einer* is more likely to be interpreted elliptically (when in competition with the independent interpretation) if the potential antecedent is part of the object of the preceding sentence than if it is part of the subject in the preceding sentence.

(194) **Hypothesis 2.2: Parallelism**

The indefinite pronoun *einer* is more likely to be interpreted elliptically (when in competition with the independent interpretation) if *einer* and the potential antecedent are in a parallel grammatical role than if they appear in non-parallel roles.

6.4.2 Method

Participants

132 native speakers of German (108 female, 20 male, 4 no information, mean age = 22.9, SE = 5.3) participated in Experiment 2 for course credit. No participant took part in more than one study presented in this chapter.¹⁴ All experiments discussed in this paper were covered by an ethics protocol approved by the Deutsche Gesellschaft für Sprachwissenschaft (DGfS, German Linguistic Society).

¹⁴ According to self-reporting of the participants.

Materials

I constructed 32 German short stories consisting of four sentences each. An example can be seen in Table 26 and Table 27.¹⁵ Sentence one and two of the items served to introduce a suitable context (e.g., the zoo on the weekend), with sentence one also introducing two referents by personal names (e.g., *Pia* and *Christoph*). Sentence three introduced a third referent in either object or subject position with an indefinite noun phrase (*an animal keeper*). The last sentence introduced a fourth referent with the indefinite pronoun *einer*, also in either subject or object position. Importantly, *einer* was ambiguous between an elliptic and an independent interpretation. Sentences three and four were either of the context type ‘neutral’ (i.e., separated by a full stop and with two different verbs in sentences three and four) or of the context type ‘elliptic’, favoring an elliptic interpretation by being connected by *and* and using the same verb in sentences three and four (see the discussion in section 6.3.2).

S1		Am Wochenende haben Pia und Christoph den Kölner Zoo besucht. <i>‘At the weekend, Pia and Christoph visited the Cologne Zoo.’</i>
S2		Vor dem Elefantengehege blieben sie eine Weile stehen. <i>‘In front of the elephant enclosure they stopped for a while.’</i>
S3	a	Ein Tierpfleger hat Pia erschreckt. <i>‘An animal keeper scared Pia.’</i>
	b	Pia hat einen Tierpfleger erschreckt. <i>‘Pia scared an animal keeper.’</i>
S4	i-	Bei den Pinguinen hat einer Christoph angetippt. Weil ... <i>‘At the penguins, one tapped Christoph. Because ...’</i>
	ii	Bei den Pinguinen hat Christoph einen angetippt. Weil ... <i>‘At the penguins, Christoph tapped one. Because...’</i>

Table 26: Example item for Experiment 2 in condition context type ‘neutral’.

¹⁵ Most of the items designed for Experiment 2 were based on the items in Experiment 1, described in Chapter 5. However, all items were modified due to the described criteria.

S1	Am Wochenende haben Pia und Christoph den Kölner Zoo besucht. <i>At the weekend, Pia and Christoph visited the Cologne Zoo.</i>	
S2	Vor dem Elefantengehege blieben sie eine Weile stehen. <i>In front of the elephant enclosure they stopped for a while.</i>	
S3 + S4	a-i	Ein Tierpfleger hat Pia angetippt und bei den Pinguinen hat einer Christoph angetippt. Weil ... <i>An animal keeper tapped Pia and at the penguins, one tapped Christoph. Because ...</i>
	b-i	Pia hat einen Tierpfleger angetippt und bei den Pinguinen hat einer Christoph angetippt. Weil ... <i>Pia tapped an animal keeper and at the penguins, one tapped Christoph. Because ...</i>
	a-ii	Ein Tierpfleger hat Pia angetippt und bei den Pinguinen hat Christoph einen angetippt. Weil ... <i>An animal keeper tapped Pia and at the penguins, Christoph tapped one. Because...</i>
	b-ii.	Pia hat einen Tierpfleger angetippt und bei den Pinguinen hat Christoph einen angetippt. Weil ... <i>Pia tapped an animal keeper and at the penguins, Christoph tapped one. Because...</i>

Table 27: Example item for Experiment 2 in condition context type ‘elliptic’.

As in Experiment 1, presented in the previous chapter, I formulated a subsequent alternative question for each item, which asked about a tendency on a scale between two options. The question always asked about the referent that was mentioned in the fourth sentence with the indefinite pronoun *einer*, and the two options always correlated with the nominal characteristic of the referent (i.e., *an animal keeper*) that was introduced in the third sentence (i.e., question type elliptic from Experiment 1). An example of the formulated questions is shown in (195).

- (195) Derjenige, der Christoph antippt, ist eher ...
 ein Tierpfleger oder kein Tierpfleger?
*‘The person that taps Christoph is rather ...
 an animal keeper or not an animal keeper?’*

The experiment followed a 2x2x2 design with the conditions grammatical role of *einer* (subject or object), grammatical role of antecedent (subject or object), and context type (elliptic or neutral) as independent variables, and ratings as a dependent variable. Because I varied the grammatical role of the indefinite pronoun *einer* and the antecedent, this resulted in *einer* and its antecedent being in a parallel grammatical role (subject/subject and object/object) in half of the cases and in a non-parallel position (subject/object and object/subject) in half of the cases. In this experiment, I did not vary the factor question

type. The question was always an elliptic one, asking whether the referent belonged to a certain nominal characteristic.

In addition to the experimental items, I constructed 33 filler stories that were very similar in structure to the experimental stories. They also consisted of four sentences with two human referents introduced in the first sentence by proper name. In the last sentence, another referent was introduced, usually by a full noun phrase. However, unlike their experimental counterparts, filler items did not evoke any ambiguity. I used three types of fillers. Fillers of the type ‘group’ should yield high ratings, as the third referent was always part of the nominal. Fillers of the type ‘other’ should yield low ratings, as the referent did not belong to the same characteristic as the nominal in the question. The filler type ‘medium’ was designed to result in ratings in the middle of the scale. Examples of the different filler types can be seen below in Table 28.

All materials were distributed across eight presentation lists in a way that all experimental stories appeared in all conditions and no story appeared twice within a list. In other words, each list contained 32 experimental trials, with 4 trials per condition, and 33 filler items.

Procedure

The experiment was done in Qualtrics (www.qualtrics.com). Participants received a link to the study via mail. They were first informed about their personal rights and data protection. After answering some personal questions (gender, age, and mother tongue), they were informed about the task of the experiment. Participants were told that they were going to read short texts that could be the beginning of a longer story, and then would have to give their opinion about a person in that story by using a slider. While they were encouraged to use the full range of the slider, I asked them not to think too long about their answers or the exact position and to trust their intuition during the experiment. During the experiment, items were presented one by one. Below the story text, participants saw a slider that was labeled with the respective alternative question (for an illustration, see the method section of Experiment 1 in Chapter 5).

Participants received course credit for taking part in the experiment. Therefore, they received a code at the end of the experiment, which they had to upload for course credit. Participation in the experiment was voluntarily; students could also choose an alternative task to receive the same course credit.

Filler type 'group'	
Letzte Woche haben Stefan und Helen zum ersten Mal ein Basketballspiel geschaut und waren von der Stimmung begeistert. Stefan hat das Team angefeuert. Nach dem Spiel hat Helen einen Basketballer nach einem Autogramm gefragt. Aber ...	Derjenige, den Helen fragt, ist eher ... ein Sportler kein Sportler
<i>'Last week Stefan and Helen watched a basketball game for the first time and were thrilled by the atmosphere. Stefan cheered the team on. After the game, Helen asked a basketball player for an autograph. But ...'</i>	<i>'The person that Helen asks is rather ... an athlete no athlete'</i>
Filler type ,other'	
Am Samstag haben Barbara und Simon auf einem kleinen Flohmarkt ein paar Sachen verkauft. Sie haben versucht ihr altes Geschirr loszuwerden. Barbara hat mit einem Manager gefeilscht. Beim Abbauen hat ein Student Simon geholfen. Dann ...	Derjenige, der Simon hilft, ist eher ... ein Manager kein Manager
<i>'On Saturday Barbara and Simon sold a few things at a small flea market. They tried to get rid of their old dishes. Barbara haggled with a manager. A student helped Simon with the dismantling. Then...'</i>	<i>'The person that helps Simon is rather ... a manager no manager'</i>
Filler type 'medium'	
Wie jedes Jahr haben Iven und Lena das Oktoberfest in München besucht. Begeistert tanzten sie auf den Bänken. Iven bestellte beim Wiesn-Kellner ein Bier. Als der nächste Hit erklang, hat ein Unbekannter Lena zugeprostet. Kaum ...	Derjenige, der Lena zuproestet, ist eher ... ein Münchner kein Münchner
<i>'As every year, Iven and Lena visited the Oktoberfest in Munich. They danced enthusiastically on the benches. Iven ordered a beer from the Wiesn waiter. When the next hit sounded, an unknown person toasted Lena. Hardly ...'</i>	<i>'The person that toasts Lena is rather... a person from Munich no person from Munich'</i>

Table 28: Example fillers for Experiment 2.

Analytic plan

All analyses were conducted in RStudio (R version 3.4.0), using the tidyverse environment (version 1.2.1) and the lme4 package (version 1.1-17). I took slider positions as ratings ranging from -100 to 100. I took these positions to reflect how participants interpreted the indefinite pronoun.

I fitted a linear mixed effects model with grammatical role of the indefinite pronoun, grammatical role of the antecedent, and context type as independent variables, and ratings as dependent variable. The independent variables were sum-coded prior to the analyses. The model included random intercepts as well as random slopes for grammatical role of the indefinite pronoun, grammatical role of the antecedent, and context type, and their interaction, for both participants and items. Because the model did not converge, I

excluded the interaction term. I will assume any absolute t -value of 2 or higher to indicate statistical reliability (Baayen, 2008; Gelman & Hill, 2007).

Based on the hypotheses formulated above, I make the following predictions. Note that low values correspond to an elliptic, high values correspond to an independent interpretation of *einer*. Based on the locality hypothesis, I predict a main effect of the factor grammatical role of the antecedent, with lower ratings if the antecedent is in object position than if it is in subject position. Based on the parallelism hypothesis, I predict an interaction of the factors grammatical role of the pronoun and grammatical role of the antecedent, such that ratings are lower if pronoun and antecedent are in a parallel grammatical role than if they are in a non-parallel grammatical role. I furthermore predict a main effect of context type, with the type ‘elliptic’ being rated lower than ‘neutral’.

6.4.3 Results

Filler

121 participants provided data for the analysis.¹⁶ First, I looked at the mean ratings of the three different filler types. Note that low ratings always mean a greater likelihood of an elliptic interpretation. I excluded participants from the data set that did not have both a mean positive value for the filler type ‘other’ and a mean negative value for the filler type ‘group’. Furthermore, I excluded participants that rated the filler type ‘medium’ not between their values for types ‘group’ and ‘other’. For example, a participant that gave a mean rating of 25 for the filler type ‘other’ and -25 for ‘group’ was only included if he or she rated the filler type ‘medium’ higher than -25 but lower than 25. Due to these criteria, 15 participants had to be excluded from the data set.

Mean ratings for the different filler types of the remaining 106 participants are illustrated in Table 29. As expected, mean ratings were low for the filler type ‘group’, high for the filler type ‘other’, and close to zero for the filler type ‘medium’. I took the results for the filler items as evidence that participants understood the task as intended.

¹⁶ Eleven participants that I collected data from answered less than 90 percent of the items. These participants were excluded from the analysis.

Filler Type	Elliptic question
group	-78.2
medium	-5.5
other	74.4

Table 29: Mean filler ratings in Experiment 2.

Critical items

Mean ratings for the critical items are summarized in Table 30 and plotted in Figure 7 for context type ‘elliptic’ and Figure 8 for context type ‘neutral’. Results of the inferential statistics are summarized in Table 31.

Figure 7 plots mean ratings for the critical items, but only for the condition context type ‘elliptic’. Note that the visual display tries to mimic the slider participants used in their experiment. In the plot, items are separated for the condition grammatical role of the antecedent (on the y-axis) and the condition grammatical role of the pronoun (see different-faced grids). We can see an interaction of the two grammatical role conditions, such that ratings for *einer* are lower in subject position if the antecedent is in subject position as well, and, such that ratings for *einer* in object position are lower if the antecedent is also in object position. In other words, we see an effect of parallelism of grammatical role: cases where *einer* and the antecedent are in a parallel grammatical role (see different shapes) are rated lower than cases where *einer* and the antecedent appear in non-parallel grammatical roles. Furthermore, we see an effect of the grammatical role of *einer*, as ratings are higher if *einer* appears in subject position (see upper panel).

Figure 8 plots mean ratings for those critical items that appeared in the condition context type ‘neutral’. The graph shows the same two effects as Figure 7, ratings are lower if pronoun and antecedent appear in parallel grammatical roles than if they appear in a non-parallel role and ratings are higher if the pronoun *einer* appears in subject position than if it appears in object position.

We can furthermore observe that mean ratings for the items that appeared in the condition context type ‘elliptic’ are lower than for those in the condition context type ‘neutral’. This is true for every combination of the other conditions, as Table 30 shows.

Grammatical role <i>einer</i>	Grammatical role antecedent	Grammatical role structure	Context type	mean
subject	subject	parallel	elliptic	-21.6
subject	subject	parallel	neutral	-7.6
subject	object	non-parallel	elliptic	-14.0
subject	object	non-parallel	neutral	-4.6
object	subject	non-parallel	elliptic	-18.9
object	subject	non-parallel	neutral	-10.5
object	object	parallel	elliptic	-29.7
object	object	parallel	neutral	-19.1

Table 30: Mean ratings of critical items in Experiment 2, low ratings equal an elliptic, high ratings an independent interpretation.

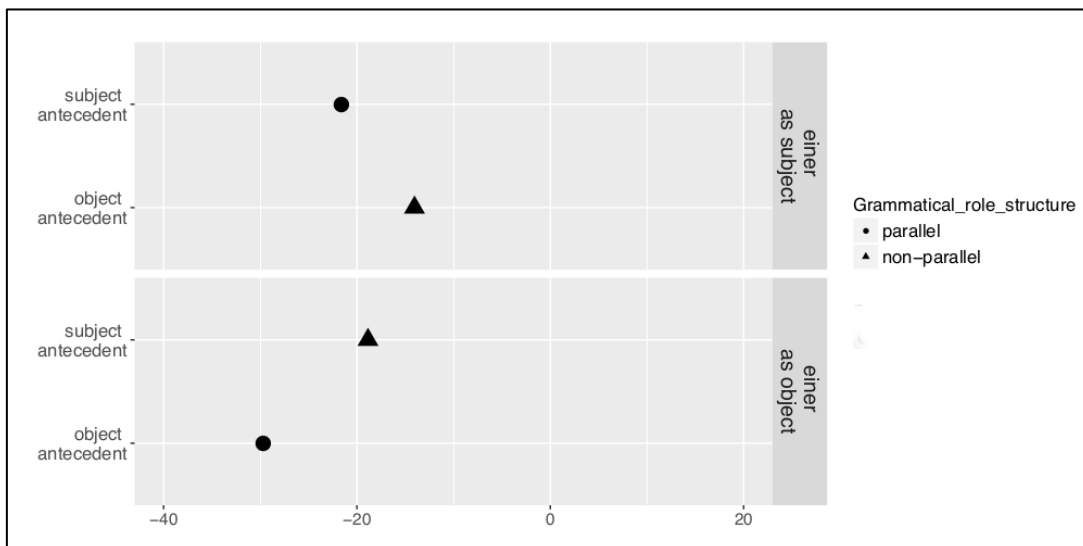


Figure 7: Mean ratings of critical items in Experiment 2 in the condition 'context type elliptic', low ratings equal an elliptic, high ratings an independent interpretation.

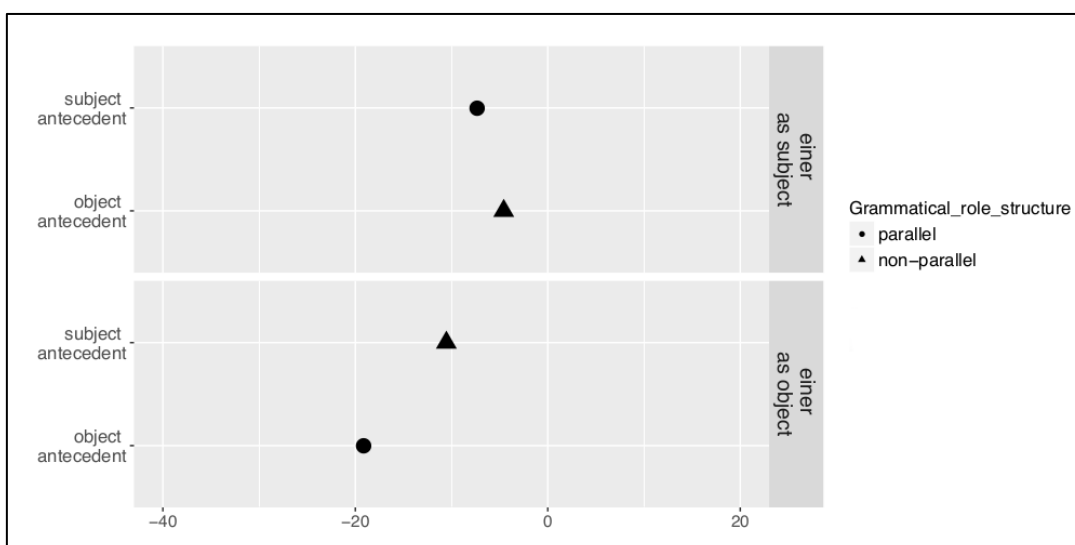


Figure 8: Mean ratings of critical items in Experiment 2 in the condition 'context type neutral', low ratings equal an elliptic, high ratings an independent interpretation.

Results of the regression models confirm these observations. I found a main effect of context type, with contexts favoring an elliptic interpretation being rated lower than contexts not favoring an elliptic interpretation ($\beta = -10.120$, $SE = 2.006$, $t = -5.045$). For grammatical role, I found a main effect of the factor grammatical role *einer*, such that if *einer* is in subject position, the interpretation receives higher ratings ($\beta = -7.421$, $SE = 3.001$, $t = -2.473$). I furthermore found an interaction of these two factors ($\beta = -14.272$, $SE = 3.892$, $t = -3.667$). No other interactions turned out significant.

Main Effect/ Interaction	β	Std. Error	t-value
Intercept	-15.712	5.090	-3.087
Grammatical role <i>einer</i>	-7.421	3.001	-2.473
Grammatical role antecedent	-2.100	2.274	-0.924
Context	-10.120	2.006	-5.045
Grammatical role <i>einer</i> x Grammatical role antecedent	-14.272	3.892	-3.667
Grammatical role <i>einer</i> x Context	1.711	3.901	0.439
Grammatical role antecedent x Context	1.662	3.922	0.424
Grammatical role <i>einer</i> x Grammatical role antecedent x Context	-8.454	7.843	1.078

Table 31: Results of the statistical analysis of Experiment 2.

6.4.4 Discussion

The results suggest two effects of the factor grammatical role: first, *einer* is more likely to be interpreted elliptically if it occurs in a parallel grammatical role structure, and second, *einer* is more likely to be interpreted elliptically if the pronoun occurs in object position. Furthermore, as predicted, the pronoun was interpreted elliptically more often if it occurred in a context that was designed to favor an elliptic interpretation.

If an indefinite pronoun *einer* and a possible antecedent are in a parallel grammatical role structure, participants are more likely to interpret the indefinite pronoun elliptically. This is true for both *einer* and the antecedent occurring in subject as well as both occurring in object position. The results of the experiment thus confirm Hypothesis 3.2 and are in line with observations made on the interpretation of ambiguous personal pronouns as well as Hendriks and de Hoop's (2001) parallelism constraint.

Second, *einer* was also more likely to be interpreted elliptically (compared to an independent interpretation) if the pronoun itself occurred in object position. I hypothesize that this effect could be due to processing effects related to morphological marking.

Recall from Chapter 2 that the indefinite pronoun *ein(er)* and the indefinite article in German differ in their inflection in the masculine nominative as well as the neutral nominative and accusative, as illustrated in (196), where the indefinite article in the first clause does not receive an inflectional suffix, while the pronoun in the second clause does.

- (196) Sandra kauft sich **ein** Fahrrad und Anne kauft sich auch **eines**.
'Sandra is buying a bicycle and Anne buys one, too.'

It seems reasonable to assume that if people encounter a male *einer* in subject position, morphological marking already explicitly tells them to process it as a pronoun, which then in turn supports the independent interpretation. If, however, they encounter *einen* in object position, without reading the subsequent word, *einen* alone could also be an indefinite article, which could potentially support the elliptic interpretation. The contrast is illustrated in example (197), with (197a) illustrating the morphological properties of the male pronoun and article in subject position and (197b) doing so for the object position.

- (197) a. **Ein** Mann/ **Einer** hat Sandra begrüßt.
'A man/someone greeted Sandra.'
 b. Sandra hat **einen** Mann / **einen** begrüßt.
'Sandra greeted a man/someone.'

Such a reasoning predicts that we should find an effect of position of the pronoun only for forms where the pronoun and the article differ in their morphological marking. The independent interpretation is least restricted in the masculine, but if a context strongly suggests a female referent, the feminine form is also allowed. Such a context is illustrated in (198), where *eine* refers to an unspecified female person. Now, in (199), we find a similar ambiguity to that in the experiment, as *eine* here can either be interpreted independently or elliptically (as referring to a tennis player).¹⁷

- (198) Ein Trainer besucht für das Talentscouting ein Mädcheninternat. Im Speisessaal hat der Trainer **eine** angesprochen.
'A coach visits a girls' boarding school for talent scouting. In the dining hall, the coach approached someone_{female}.'

¹⁷ In German, female referents are not clearly marked for grammatical role as the inflection is the same for nominative and accusative feminine. However, as the male referent in the example is inflected, there is no subject/object ambiguity in the example.

- (199) a. Ein Trainer besucht für das Talentscouting ein Mädcheninternat um nach einer Tennisspielerin zu suchen. Im Speisessaal hat **eine** den Trainer angesprochen.
- b. Ein Trainer besucht für das Talentscouting ein Mädcheninternat um nach einer Tennisspielerin zu suchen. Im Speisessaal hat der Trainer **eine** angesprochen.
- 'A coach visits a girls' boarding school for talent scouting to look for a tennis player. In the dining hall, **one**_{female} approached the coach/ the coach approached **one**_{female}.'*

Indeed, both examples (199), which differ in the grammatical role position of *eine*, seem to have a strong preference for an elliptic interpretation, with no difference between (199a) and (199b). However, if we change the gender (see (200)), we do find a difference between the examples, with an independent interpretation being more likely in (200a), where the pronoun occurs in subject position. However, this effect is only based on internal judgements and would need further experimental testing.

- (200) a. Ein Trainer besucht für das Talentscouting ein Jungeninternat um nach einem Tennisspieler zu suchen. Im Speisessaal hat **einer** den Trainer angesprochen.
- b. Ein Trainer besucht für das Talentscouting ein Jungeninternat um nach einem Tennisspieler zu suchen. Im Speisessaal hat der Trainer **einen** angesprochen.
- 'A coach visits a boys' boarding school for talent scouting to look for a tennis player. In the dining hall, **one** approached the coach/ the coach approached **one**.'*

Hypothesis 3.1, which predicted more elliptic interpretations if the potential antecedent is in object position than if it is in subject position, was however not confirmed by the results of the experiment, as we did not see a main effect of grammatical role of the antecedent. This is probably due to the fact that the research on processing of different ellipsis phenomena, which finds locality effects in the interpretation of ellipsis, usually deals with a different type of ambiguity, namely an ambiguity in the choice of the antecedent. In the case of *einer*, ambiguity only refers to the interpretation of the pronoun (elliptic or independent), while there is only one potential antecedent for an elliptic interpretation. I will also address this point in the general discussion which follows after the next section, which presents Experiment 3.

6.5 Experiment 3: Testing the partitive interpretation of the pronoun *ein(er)*

6.5.1 Hypotheses and set up

In Experiment 2, I tested short discourses where an indefinite pronoun *einer* was ambiguous between an elliptic and an independent interpretation. In Experiment 3, now, I look at contexts where *einer* is ambiguous between a partitive, an elliptic, and an independent interpretation. The goal is to contrast the partitive with the elliptic and independent interpretations and to test how grammatical role influences the interpretation of *einer* in such examples.

In Experiment 3, I used the same design as in Experiment 2 and therefore, again, conducted a rating study. Participants read similar short stories that consisted of four sentences. In this experiment, however, the third sentence did not introduce a single referent by an indefinite noun phrase, but always introduced a set by a quantified noun phrase (e.g., *two animal keepers* instead of *an animal keeper*). The context therefore also allowed for a partitive interpretation of *einer*, and the indefinite pronoun was thus ambiguous between a partitive and an elliptic or independent interpretation. Again, I varied the grammatical role of both the antecedent and the indefinite pronoun *einer*, and sentences appeared either coordinated with the same verb or non-connected with different verbs. Each story was followed by an alternative question that asked participants to rate the referent introduced by *einer* on a continuous scale.

The experiment was designed to test the following hypotheses:

(201) a. Hypothesis 3.1: Prominence of antecedent

The indefinite pronoun *einer* is more likely to be interpreted partitively (compared to an elliptic or independent interpretation) if the potential antecedent occurs in subject position than if it occurs in object position.

b. Hypothesis 3.2: Parallelism

The indefinite pronoun *einer* is more likely to be interpreted partitively (compared to an elliptic or independent interpretation) if *einer* and the potential antecedent are in parallel grammatical roles than if they occur in non-parallel roles.

c. Hypothesis 3.3: Subjecthood pronoun

The indefinite pronoun *einer* is more likely to be interpreted partitively if it occurs in subject position than if it occurs in object position.

6.5.2 Method

Participants

142 native speakers of German (121 female, 21 male, mean age = 22.2, SE = 4.9) participated in the experiment for course credit. No participant took part in more than one study presented in this chapter. All experiments discussed in this paper were covered by an ethics protocol approved by the Deutsche Gesellschaft für Sprachwissenschaft (DGfS, German Linguistic Society).

Materials

For Experiment 3, I used the 32 German short stories that were created for Experiment 2 in the same 2x2x2 design. However, I modified the stories in two respects. First, to allow for a partitive reading of the indefinite pronoun *einer*, I had to make a set referent accessible in the context. Thus, the possible antecedent in sentence three was now a set introduced by a quantified noun phrase instead of a single referent introduced by an indefinite noun phrase. The second modification mostly concerned the adverbials used at the beginning of the fourth sentence. The results of the experiment presented in Chapter 5 showed a strong interpretational preference for a partitive reading of *einer*. To make sure that this preference did not mask any effects and that the results did not only show a ceiling effect, I created contexts that made the partitive interpretation less likely (for example, through a change of scenery). Two examples of those modifications can be seen in Table 32, and a full list of items can be found in Appendix B.

As in Experiments 1 and 2, I formulated a subsequent alternative question for each item. The question always asked whether the referent that was mentioned in the fourth sentence with the indefinite pronoun *einer* was part of the set that was introduced in the third sentence (e.g., *three lawyers*), meaning I used the question type ‘partitive question’ from Experiment 1 in Chapter 5. An example can be seen in (202). Note that the first answer in (202) corresponds to a partitive interpretation of *einer*, while the second answer suggests an elliptic or independent interpretation.

- (202) Derjenige, der Christoph antippt, ist eher ...
 einer der drei Tierpfleger oder eine andere Person?
*‘The person that taps Christoph is rather ...
 one of the animal keepers or another person?’*

Experiment 2	Experiment 3
Context: Brewery pub in the old town of Cologne	
Benedikt hat einen Holländer verspottet. Beim Aufbrechen hat Anna einen beschimpft. Sofort ... <i>'Benedikt mocked a Dutchman. While leaving, Anna insulted one. Immediately...'</i>	Benedikt hat vier Holländer verspottet. An der Bahnhaltestelle hat Anna einen beschimpft. Sofort ... <i>'Benedikt mocked four Dutchmen. At the train stop, Anna insulted one. Immediately...'</i>
Context: Family Court hearing	
Ein Rechtsanwalt musterte Daniel. Nach der Verhandlung begrüßte Nadja einen. Anscheinend ... <i>'A lawyer examined Daniel. After the trial, Nadja greeted one. Apparently...'</i>	Drei Rechtsanwälte musterten Daniel. In der Gerichtscafeteria begrüßte Nadja einen. Anscheinend ... <i>'Three lawyers examined Daniel. In the court cafeteria, Nadja greeted one. Apparently...'</i>

Table 32: Example modifications of items from Experiment 2 for Experiment 3.

The experiment followed a 2x2x2 design, with the conditions grammatical role *einer* (subject or object), grammatical role antecedent (subject or object), and context type (elliptic or neutral) as independent variables, and ratings as a dependent variable. Because I varied the grammatical role of the indefinite pronoun *einer* and the antecedent, in half of the cases *einer* and its antecedent were in parallel grammatical roles (subject/subject and object/object), and in half of the cases they were in non-parallel roles (subject/object and object/subject). I did not vary the factor question type, but the subsequent question was always a partitive one, asking whether the referent was part of the introduced set. If participants interpreted the ambiguous pronoun partitively, they should have answered this question positively (e.g., *one of the three lawyers*). If, however, they interpreted the pronoun as elliptic or independent, they should have answered negatively (e.g., *another person*). As in the previous experiments, I used a slider to record participants' judgements.

In addition to the experimental items, I used the same filler design as in Experiment 2, with the filler types 'group', 'medium', and 'other'. I constructed 33 filler stories that were based on the fillers used in Experiment 2 but strongly modified to fit the subsequent partitive questions in Experiment 3.

All materials were distributed across eight presentation lists in a way that all experimental stories appeared in all conditions and no story appeared twice within a list. In other words, each list contained 32 experimental trials, with 4 trials per condition, and 33 filler items.

Procedure

The experiment was done in Qualtrics (www.qualtrics.com). Participants received a link to the study via email. They were then informed about their personal rights and data protection. After answering some personal questions (gender, age, and mother tongue) they were informed about the task of the experiment. Participants were told that they were going to read small texts that could be the beginning of a longer story, and then would have to give their opinion about a person in that story by using the shown slider. While they were encouraged to use the full range of the slider, I asked them not to think too long about their answers or the exact position of the slider and to trust their intuition during the experiment. During the experiment, items were presented one by one. Below the story text, participants saw a slider that was labeled with the respective alternative question (see section 6.4.2).

Participants received course credit for taking part in the experiment. Therefore, they received a code at the end of the experiment, which they had to upload for course credit. Participation in the experiment was voluntary; students could also choose an alternative task to receive the same course credit.

Analytic plan

All analyses were conducted in RStudio (R version 3.4.0), using the tidyverse environment (version 1.2.1) and the lme4 package (version 1.1-17). I took slider positions as ratings ranging from -100 to 100. I took the slider position to reflect how participants interpreted the indefinite pronoun.

I fitted a linear mixed effects model with grammatical role of the indefinite pronoun, grammatical role of the antecedent, and sentence structure as independent variables, and ratings as dependent variable. All independent variables were sum-coded prior to the analyses. The model included random intercepts as well as random slopes for grammatical role of the indefinite pronoun, grammatical role of the antecedent, and sentence structure, and their interaction, for both participants and items. Because the model did not converge, I excluded the interaction term for the items. I will assume any absolute t -value of 2 or higher to indicate statistical reliability (Baayen, 2008; Gelman & Hill, 2007).

Based on the hypotheses, I make the following predictions. Note that low values correspond to a partitive interpretation, while high values correspond to an elliptic or independent interpretation. I predict a main effect of grammatical role of the antecedent, such

that values are lower when the antecedent occurs in subject position, and an interaction of the factors grammatical role of the antecedent and grammatical role of the pronoun. I furthermore predict a main effect of the factor grammatical role of the pronoun, such that values are lower when *einer* occurs in subject position, and a main effect for context type, with coordinated sentences being rated higher than non-connected sentences.

6.5.3 Results

Filler

142 participants provided data for the analysis. As in Experiment 2, I first looked at mean ratings of the three different filler types. Note that in this experiment a low rating always means a greater likelihood of a partitive interpretation. As in the previous experiment, I excluded participants from the data set that did not have both a mean positive value for the filler type ‘other’ and a mean negative value for the filler type ‘group’. Furthermore, I excluded participants that rated the filler type ‘medium’ not between their values for the filler types ‘group’ and ‘other’. Due to these criteria, 6 participants had to be excluded from the data set.

Mean ratings for the different filler types of the remaining 136 participants are illustrated in Table 33. As expected, mean ratings were low for the filler type ‘group’, high for the filler type ‘other’, and ranging in between for the filler type ‘medium’.

Filler Type	Partitive question
group	-68.2
medium	29.5
other	80.9

Table 33: Mean filler ratings in Experiment 3.

Critical items

Mean ratings for the critical items are summarized in Table 34 and plotted in Figure 9 for context type ‘elliptic’ and Figure 10 for context type ‘neutral’. Results of the inferential statistics are summarized in Table 35.

Figure 9 plots mean ratings for the critical items, but only for the condition context type ‘elliptic’. Note that the visual display tries to mimic the slider participants used in their experiment. In the plot, items are separated for the condition grammatical role of the antecedent (on the y-axis) and the condition grammatical role of the pronoun (see

different-faced grids). We can see an effect of the condition grammatical role *einer* such that ratings are lower if *einer* appears in subject position than if it appears in object position.

Figure 10 plots mean ratings for those critical items that appeared in the condition context type ‘neutral’. Interestingly, the effect for grammatical role of *einer* that was visible in Figure 9 seems to disappear in the condition context type ‘neutral’. Furthermore, we see a tendency that ratings are lower if the antecedent and the pronoun appear in parallel grammatical roles.

We can furthermore observe that mean ratings for the items that appeared in the condition context type ‘elliptic’ are higher than for those in the condition context type ‘neutral’.

Grammatical role <i>einer</i>	Grammatical role antecedent	Grammatical role structure	Context type	mean
subject	subject	parallel	elliptic	-20.6
subject	subject	parallel	neutral	-27.9
subject	object	non-parallel	elliptic	-18.5
subject	object	non-parallel	neutral	-20.2
object	subject	non-parallel	elliptic	-10.9
object	subject	non-parallel	neutral	-21.7
object	object	parallel	elliptic	-9.9
object	object	parallel	neutral	-27.3

Table 34: Mean ratings of critical items in Experiment 3, low ratings equal a partitive interpretation, high ratings equal an elliptic or independent interpretation.

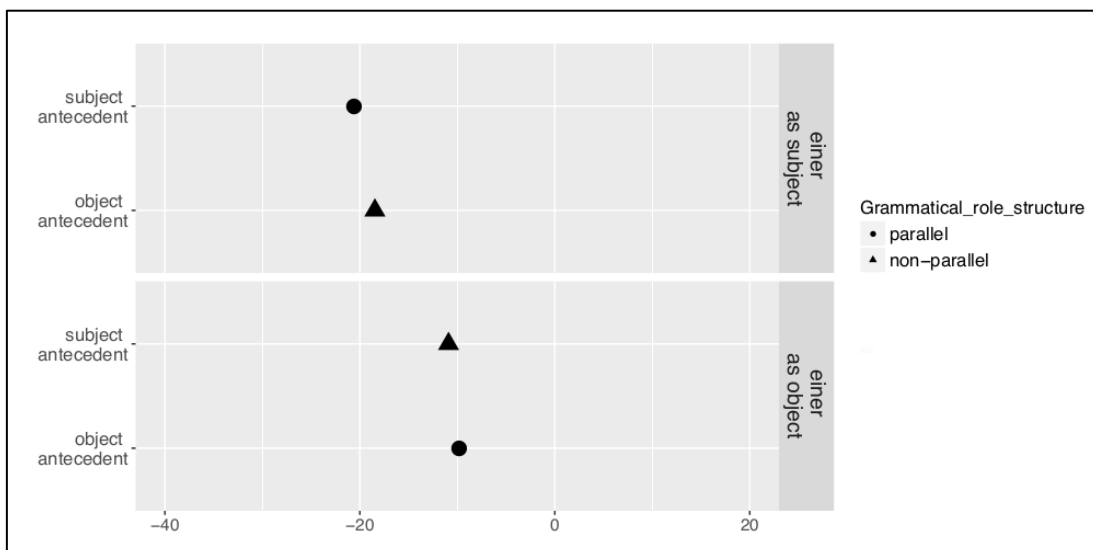


Figure 9: Mean ratings of critical items in Experiment 3 in the condition 'context type elliptic', low ratings equal a partitive, high ratings an elliptic or independent interpretation.

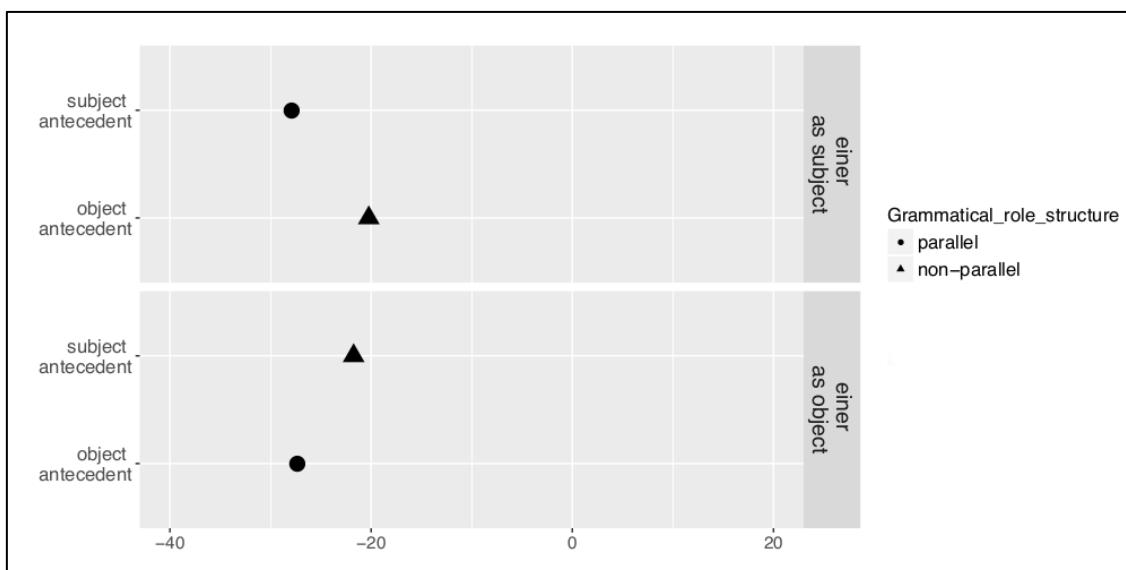


Figure 10: Mean ratings of critical items in Experiment 3 in the condition 'context type neutral', low ratings equal a partitive, high ratings an elliptic or independent interpretation.

Results of the regression model mainly confirm these observations. I found a main effect of context type, with the type 'neutral' being rated lower than elliptic contexts ($\beta = -9.424$, $SE=3.193$, $t=-2.951$). I furthermore found a significant interaction of the factor grammatical role *einer* and context type ($\beta = 9.261$, $SE=3.754$, $t=2.467$). No other main effect or interaction turned out significant.

Main Effect/ Interaction	β	Std. Error	t-value
Intercept	-19.596	4.525	- 4.331
Grammatical role <i>einer</i>	4.139	2.336	-1.772
Grammatical role antecedent	1.21	2.06	0.587
Context	9.424	3.193	2.951
Grammatical role <i>einer</i> x Grammatical role antecedent	-6.135	3.754	1.634
Grammatical role <i>einer</i> x Context	9.261	3.754	2.467
Grammatical role antecedent x Context	0.427	3.752	0.114
Grammatical role <i>einer</i> x Grammatical role antecedent x Context	12.208	7.506	1.627

Table 35: Results of the statistical analysis of Experiment 3.

6.5.4 Discussion

The results suggest an effect of context type in examples that allow all three discussed interpretations (partitive, elliptic, and independent) as well as an interaction of context type and grammatical role of the indefinite pronoun. *Einer* is less likely to be interpreted

partitively if it occurs in an elliptic context. However, this effect is less pronounced if *einer* occurs in subject position.

As predicted, the pronoun was less likely to be interpreted partitively if *einer* and the potential antecedent occurred in an elliptic context. This effect is likely due to the connectiveness of parallel coordinates, which potentially favors an elliptic interpretation in such a context. However, in the tested design, we cannot certainly distinguish whether participants favored an elliptic or independent interpretation of the pronoun, as both readings are covered by the same answer in the formulated questions (*another person*).

I also predicted an effect of the grammatical role of the pronoun, with more partitive interpretations if *einer* occurred in subject position (Hypothesis 3.3). However, the experiment did not show a main effect of grammatical role, but only an interaction with the factor context type. While for neutral contexts, we do not see a real difference for the position of the pronoun, with mean ratings of -24.1 in subject and -24.5 in object position (see also the overview in Table 36), the effect becomes visible in the elliptic context. Here, items where *einer* occurred in subject position received a mean rating of -19.6. If, however, *einer* occurred in object position, mean ratings were higher, at -10.4.

Grammatical role <i>einer</i>	Context type	mean
subject	elliptic	-19.6
subject	partitive	-24.1
object	elliptic	-10.4
object	partitive	-24.5

Table 36: Selected mean ratings of critical items in Experiment 3.

A possible explanation for the observation that we see the effect of grammatical role only in the elliptic context type could be that in non-connected sentences, the partitive preference is too strong, irrespective of grammatical role of the pronoun. We thus can observe a ceiling effect where the overall partitive preference masks other potential effects. This partitive preference was also observed in Experiment 1 in Chapter 5. Now, in coordinated sentences the partitive interpretation becomes less likely, as the context favors an elliptic interpretation. As the partitive preference is less strong, effects of the grammatical role become visible. If *einer* now occurs in subject position, the partitive interpretation becomes more likely, as predicted.

Hypotheses 3.1 and 3.2 were, however, not confirmed by the experiment. Hypothesis 3.1 addressed the prominence of the antecedent and was based on the research on ambiguous personal pronouns. It is possible, however, that the hypothesis was not confirmed because the type of ambiguity tested in this experiment is perhaps not as comparable with an ambiguity concerning the antecedent as it is with ambiguous personal pronouns (see the general discussion below for more details). Hypothesis 3.2 predicted an effect of grammatical role parallelism. A similar effect was also predicted and supported by the experimental data for the elliptic interpretation in Experiment 2. This may, however, be the reason why I did not find an effect for parallelism in Experiment 3. If both the partitive and the elliptic interpretation are favored by grammatical role parallelism, the effects might have cancelled each other out in this experiment.

To sum up, in Experiment 3, the factor grammatical role of the pronoun only became relevant in coordinated sentences, otherwise I found a stable partitive preference.

6.6 General discussion

To answer the research question of how grammatical role influences the interpretation of an ambiguous pronoun *ein(er)* in discourse, I have conducted two experiments. In section 6.4, I tested how the elliptic interpretation (compared to the independent one) was influenced by varying the grammatical role of the pronoun and a potential antecedent, and in section 6.5, I asked the same for the partitive interpretation (compared to the elliptic and independent ones). I will now compare the results of the two experiments.

The experimental design and the used materials were for the most part kept constant for both experiments, which allows us to compare the results more closely. However, while in Experiment 2, the potential antecedent only provided an NP as possible antecedent and the items therefore only allowed for an elliptic and independent interpretation of *einer*, in Experiment 3, the context always provided an accessible set referent, and *einer* was therefore ambiguous between a partitive, an elliptic and independent interpretation. Furthermore, as Experiment 2 was designed to focus on the elliptic interpretation, all stories were followed by an elliptic question (e.g., *is x an animal keeper?*), while the items in Experiment 3, which focused on the partitive interpretation, were respectively followed by a partitive question (e.g., *is x one of the three animal keepers?*). Table 37 summarizes and compares the results of Experiments 2 and 3.

<i>Einer</i> is more often interpreted elliptically , if ...	<i>Einer</i> is more often interpreted partitively , if ...
... <i>einer</i> appears in object position.	... <i>einer</i> appears in subject position, given that <i>einer</i> and the antecedent appear in a coordinated sentence.
... <i>einer</i> and the antecedent appear in parallel grammatical roles.	
... <i>einer</i> and the antecedent appear in coordinated sentences.	... <i>einer</i> and the antecedent appear in non-connected sentences.

Table 37: Overview of the results obtained in Experiments 2 and 3.

As Table 37 shows, *einer* was more likely to be interpreted elliptically if the pronoun appeared in object position, which was attributed to processing effects due to morphological marking. It was also more likely to be interpreted elliptically if the pronoun *einer* and the antecedent appeared in parallel grammatical roles. On the other hand, *einer* was more likely to be interpreted partitively if, given that *einer* and the antecedent were in coordinated sentences, the pronoun *einer* was in subject position. For Experiments 2 and 3, I created a context type that especially favored an elliptic interpretation. As intended, *einer* was more likely to be interpreted elliptically if it appeared in such a context with coordinated clauses and parallel verbs, and more likely to be interpreted partitively in the neutral context type (separate sentences and different verbs).

If we compare the results illustrated in Table 37, we can make an interesting observation: the observed effects go in opposite directions. For example, while an elliptic interpretation is more likely in a coordinated sentence, a partitive interpretation is more likely in non-connected sentences. This furthermore supports the claims made in Chapter 4, where it was argued that the anaphoric interpretations of *ein(er)* (partitive and elliptic) have to be clearly distinguished. While Chapter 4 supported this claim with a range of semantic arguments, the results of these experiments further support it with observations from the discourse behavior of partitive and elliptic *ein(er)* (see also the overview in Table 38 below). The diverging results of Experiments 2 and 3 furthermore illustrate that the tested interpretations of *ein(er)* compete with each other, and this competition is crucial for the observed tendencies. For example, it seems reasonable to assume that the low ratings for a partitive interpretation in coordinated sentences were a result of the elliptic interpretation being especially favored in such a context.

Another overall observation is that the partitive interpretation seems to be stable and not as much influenced by the factor grammatical role. Only in a context that especially favors an elliptic interpretation, which is thus a rather strong manipulation against a partitive interpretation, do we see an effect of grammatical role. This observation actually fits well with the results of Experiment 1 reported in Chapter 5. Recall that Experiment 1 found an overall partitive preference if the context allowed for such an interpretation. This preference was attributed to the observation that there is a general discourse principle of topic continuity, which is at least in part fulfilled by the partitive interpretation of *ein(er)* due to weak familiarity of the referent in this interpretation. The results thus mirror claims in the literature on anaphoric quantifiers which state that the intersection of the arguments of a determiner is a good candidate for topic continuity (Hendriks & de Hoop, 2001) or that discourse processing is easier if there is no new referent that has to be introduced into the discourse (Kaan et al., 2007; Paterson et al., 2009). If we see a strong overall preference for a partitive interpretation of *ein(er)* that is more or less stable across contexts, this can explain why this interpretation is less influenced by variation of grammatical role.

Hypothesis 5, which argued that *einer* in subject position would be more likely to be interpreted partitively, was based on the research on anaphoric quantifiers and the assumptions made by Frazier et al. (2005). However, there is a second possible explanation for the observation that *ein(er)* is more likely to be interpreted partitively when it occurs in subject position. It is also possible that this effect is due to *ein(er)* being interpreted more often partitively if it occurs in topic position. The sentence-initial position the subject occurs in is the canonical topic position in English. In German, which has a more flexible word order, the sentence-initial position is also often viewed as topic position (e.g., Molnár, 1998; Jacobs, 2001). There are several reasons why *ein(er)* in topic position would preferably be interpreted partitively. First, topics tend to be given or at least weakly familiar (e.g., Kuno, 1972; Gundel, 1988). While the elliptic and independent interpretation of *ein(er)* introduce a totally new discourse referent, the partitive interpretation is at least referentially linked to the discourse context and thus weakly familiar. While indefinites are in general viewed as bad candidates for a topic, some authors argue that indefinites can be topics if they are weakly familiar (i.e., partitive) (Prince, 1981; Ward & Prince, 1991; von Heusinger & Özge, 2021). Second, there is a tendency to keep the topic constant over longer stretches of discourse (i.e., to establish so-called topic chains).

Therefore, the topic of the preceding sentence is a likely topic of the next sentence (Givón, 1983; see also Krifka 2007). In application to the interpretation of anaphoric quantifiers, this tendency is captured by the Forward Directionality constraint by Hendriks and de Hoop (2001). It states that the intersection of two argument sets of a determiner is a likely topic for a continuation and thus a likely antecedent for a subsequent anaphoric determiner (see also van Kuppevelt, 1996). For the interpretation of *ein(er)*, the topic continuity principle as well as the Forward Directionality constraint, which would suggest a partitive preference for *ein(er)*, should apply most strongly if *ein(er)* occurs in topic position. If *ein(er)* occurs in a non-topical position, these principles cannot apply in the same way.

Frazier et al. (2005), however, explicitly argue against an influence of information status on the interpretation of anaphoric quantifiers. They conducted a questionnaire study in German, where they showed participants short discourse contexts like (203) and asked them whether they interpreted the quantifier partitively or not.

(203) Am Morgen sind fünf Schiffe am Horizont erscheinen.

a. Gegen Mittag sind drei Schiffe leider gesunken. (VP-external)

b. Gegen Mittag sind leider drei Schiffe gesunken. (VP-internal)

'In the morning, five ships appeared on the horizon. Around noon, three ships regrettably sunk.'

Frazier et al. argue that in German, phrases may scramble outside the VP, in front of a speaker-oriented adverb like *ja doch* (certainly) or *leider* (regretfully). According to the authors, a subject in this position (see (203a)) is VP-external, but is not in topic position, as the topic position is higher in the structure and sentence-initial. The subject in (203b) is therefore neither VP-external nor in topic position. Frazier et al. predict that, as in both tested conditions the quantifier is not in topic position, a difference in ratings in the conditions would support their mapping hypothesis. In fact, their results show a difference between the conditions, with 72.3% of presuppositional interpretations in the VP-external condition (203a) and only 63.1% of presuppositional interpretations in the VP-internal condition (203b).

However, it actually seems less clear that the assumption that the subject in (203a) is not in topic position is true. In fact, Frey (2004) argues that while the prefield is indeed a likely topic position in German, not every phrase that occurs in this position is necessarily a topic. He argues that there is, however, a designated topic position in German in the middle field, as described in principle (204).

(204) A medial topic position in German

In the middle field of the German clause, directly above the base position of sentential adverbials (SADVs), there is a designated position for topics: all topical phrases occurring in the middle field, and only these, occur in this position (Frey, 2004:158).

The term ‘SADV’ here refers to adverbials which express the speaker’s estimation of an eventuality, such as *glücklicherweise* (‘fortunately’) or *anscheinend* (‘apparently’), exactly the kind of adverbs Frazier et al. (2005) used in their experiment. So, if Frey is right in his assumption, the position Frazier et al. tested VP-external subjects in not only allows for topics, but requires the phrase to be a topic, and the experiment is thus not suited to tease apart the effects of subjecthood and topicality. In fact, the experimental design rather supports the assumption that the topic status of the anaphoric quantifier contributes to the observed increase in partitive interpretations. For the indefinite pronoun *ein(er)*, I thus have to leave it as an open question at this point whether the effects of grammatical role in Experiment 3 were due to subjecthood or topichood.

In the beginning of this chapter and in section 6.3.1, I formulated the main hypothesis that effects of grammatical role on the partitive interpretation of *ein(er)* should pattern with effects that were found for the interpretation of ambiguous personal pronouns, while effects on the elliptic interpretation should pattern with effects found for the interpretation of different ellipsis phenomena. Based on these assumptions, I formulated individual testable predictions. However, the results did not confirm every individual hypothesis. Should I therefore rather reject the main hypothesis?

For the elliptic interpretation, I predicted an effect of locality as well as of parallelism. Grammatical role parallelism indeed had an effect in Experiment 2 and increased elliptic interpretations. Unexpectedly, I also found an effect of position of the pronoun, with *einer* in object position being more likely interpreted elliptically than independently. This effect is not mirrored in the processing of other ellipsis phenomena. However, due to the experimental design, it is also possible that this is simply due to an advantage of an independent interpretation in subject position (see the discussion in 6.4.4). Similarly, the absence of a locality effect is also easy to explain, as I did not test an ambiguity of two possible antecedents but the pronoun itself was ambiguous between different interpretations. For the elliptic interpretation, the results thus support the main hypothesis with regard to

parallelism, and furthermore, non-predicted effects do not seem to clearly go against the main hypothesis.

For the partitive interpretation, based on the main hypothesis, I predicted effects based on prominence as well as effects of grammatical role parallelism. For prominence, we see again the same problem that the tested ambiguity actually did not match the type of ambiguity that is investigated for ambiguous personal pronouns. For grammatical role, it seems reasonable to assume that we did not see an effect, as grammatical role parallelism also favors an elliptic interpretation, and as the partitive and the elliptic interpretation were on opposite ends of the slider in Experiment 3. Those effects probably cancelled each other out. In fact, that we did not see any statistically relevant effects for grammatical role parallelism might be a hint that this does favor a partitive interpretation, as otherwise, based on the results of Experiment 2, we should have seen higher ratings for a parallel grammatical role than for non-parallel grammatical roles in Experiment 3, as the elliptic interpretation here was associated with high ratings. This is also supported by the trend that in the neutral context, where elliptic interpretations should be rather low, parallelism seems to favor a partitive interpretation (though this trend is not statistically significant). Experiment 3 furthermore shows that, in an elliptic context, *einer* is more likely to be interpreted partitively if it occurs in subject position. However, I have argued above that this effect could also be due to a pronoun *einer* being more likely interpreted partitively if it occurs in topic position. This would support the assumption that the referent of a partitive *einer*, just like the referent of a personal pronoun, is subject to principles like topic continuity. This type of arguing thus fits quite nicely with the main hypothesis.

Overall, given these considerations, I take the results of Experiments 2 and 3 to support the main hypothesis.

In this chapter, I have focused a bit more on predictions for the anaphoric interpretations, because a lot of the factors I tested were dependent on the relationship to a potential antecedent, which is only relevant for anaphoric interpretations. However, the results of Experiment 2 could suggest that an independent interpretation is more likely if the pronoun occurs in subject position, which is attributed to morphological marking. At least for the masculine form, morphology marks *einer* in subject position clearly as a pronoun, which could result in processing advantages for an independent interpretation in such a position. Because in my experiments the different interpretations were in competition, it furthermore seems difficult (and maybe even impossible) to disentangle individual effects

and attribute them to one interpretation alone. However, future studies could look more closely at the discourse behavior of the independent interpretation of *ein(er)*, for example in comparison with the German indefinite pronoun *jemand* ('someone') which can only receive an independent interpretation. Furthermore, this seems an important field of study, as the literature on indefinite pronoun seems to mostly deal with their formal (e.g., Haspelmath, 1997; Weiß, 2002) or semantic properties, such as Negative Polarity (e.g., Haspelmath, 1997; Jäger, 2010) or epistemic indefinites (e.g., Kratzer & Shimoyama, 2002; Alonso-Ovalle & Menéndez-Benito, 2003), while their role in discourse has so far received less attention.

Discourse properties of the competing interpretations of *ein(er)*

Based on the results in Chapters 4, 5, and 6, Table 38 gives an overview of the discourse properties of different interpretations of the indefinite pronoun *ein(er)*. It thus summarizes the obtained results regarding the discourse behavior of the indefinite pronoun *ein(er)*.

Interpretation	Context-dependent	Discourse status	Preference	Interpretation favored by	Type
Partitive	Yes	Weakly familiar	Strong non-elliptic/ neutral context	Subject position	Deep anaphora
Elliptic	Yes	New referent	Only in special contexts	Parallel roles/ Object position	Surface anaphora
Independent	No	New referent	Unclear	Subject position	Non-anaphoric

Table 38: Overview of discourse properties of different interpretations of *ein(er)*.

For the partitive, the elliptic and the independent interpretation of *ein(er)*, we can state the following discourse properties. The interpretation of both the partitive and the elliptic *ein(er)* depends on the context. They refer to an accessible set referent or an NP in the surrounding discourse (usually preceding), and are therefore subsumed here under the term anaphoric interpretation. The interpretation of the independent *ein(er)* is, on the other hand, as the name already suggests, independent from the discourse; it always refers to an indefinite human being. When it comes to the discourse status of its referent, the elliptic and the independent interpretation pattern together, as both introduce a new discourse referent. In the partitive interpretation, the referent introduced by *ein(er)* is linked to an already established discourse referent with a subset relationship and is thus weakly familiar. In a discourse context that allows for all three discussed interpretations, we

usually find a strong preference to interpret a pronoun *ein(er)* partitively. If this interpretation is not possible, preferences are less clear and probably depend more on the content of the clause as well as other structural factors. For example, an elliptic interpretation is more likely if the pronoun and the antecedent appear in parallel grammatical roles. This interpretation is thus boosted by structural parallelism. In my experiments, I also found that an elliptic interpretation was more likely if the pronoun *ein(er)* appeared in object position. The partitive interpretation, on the other hand, is less preferred in a specialized discourse context like coordination, which is likely due to the strong competition from the elliptic interpretation in such contexts. If the pronoun *ein(er)* appears, however, in subject or topic position, a partitive interpretation becomes again more probable. This potential effect of information structure as well as the overall partitive preference in a neutral discourse context can be attributed to general discourse principles such as topic continuity (Givón, 1983) or forward directionality (van Kuppevelt, 1996; Hendriks & de Hoop, 2001). The influence of structural factors on the independent interpretation of *ein(er)* has been neglected a bit in this study. The results suggest a preference for *ein(er)* to be interpreted independently if it occurs in subject position. However, this has to be further investigated in future studies.

Limitations of the studies

The first limitation concerns the type of ambiguity that was tested in the experiments. Experiments 2 and 3 tested how an ambiguous pronoun was interpreted, but ambiguity here referred to the type of interpretation (i.e., whether, for example, a pronoun was interpreted partitively or independently). However, the research on personal pronouns, for example, shows that there is another type of ambiguity that concerns the antecedent of an anaphoric expression. This was totally neglected in the presented experiments, but it is of course possible to test an ambiguity between antecedents for the indefinite pronoun *ein(er)*. Two examples that illustrate this are shown in (205).

(205) a. Auf dem Pausenhof haben zwei Lehrer einige Schüler zurechtgewiesen. **Einer** hatte ein rotes T-Shirt an.

*'In the schoolyard, two teachers reprimanded some students. **One** of them was wearing a red T-shirt.'*

b. Auf dem Pausenhof hat ein Lehrer mit einen Schüler gesprochen und im Klassenzimmer hat **einer** noch die Tafel sauber gemacht.

*'In the playground, one teacher was talking to a student and in the classroom, **one** was still cleaning the blackboard.'*

In (205a), *Einer* is most likely interpreted partitively, but it could be interpreted as referring either to one of the two teachers who are in subject position in the first sentence or to one of the students in object position. Similarly, for the elliptic interpretation in (205b), *einer* could refer either to a teacher where the antecedent is part of the subject, or to a student where the antecedent is not in subject position. At this point, however, this additional research question has to be left open for future work. However, an investigation of this type of ambiguity would be especially interesting, as it is more directly comparable with personal pronouns. Based on the main hypothesis formulated for this chapter, I would predict that the partitive interpretation of *ein(er)* would – also for this type of ambiguity – pattern with personal pronouns (i.e., would rather refer to a prominent antecedent), while the elliptic interpretation is perhaps more likely to follow constraints, such as the locality bias, that have been observed in the processing of ellipsis.

Another limitation concerns the discussed relationship between subjecthood and topichood and the impossibility of assigning found effects clearly to one of the two factors. Conflating grammatical role and topichood is a general problem in experimental designs, as this is simply the result of the use of an unmarked SVO structure in German. It is therefore also a problem in the research on the resolution of personal pronouns and anaphoric quantifiers. However, there is some literature on pronoun resolution that tries to disentangle the effects of grammatical role and topichood (Kaiser, 2011; Colonna et al., 2012, 2014). For example, in an eye-tracking experiment, Kaiser (2011) showed that effects are most pronounced if subjecthood and topicality overlap, while grammatical role influences pronoun resolution even when separated from information structure (i.e., topichood). This seems to suggest that, at least for personal pronouns, both grammatical role and information status seem to have an influence.

The disentanglement of grammatical role/topichood for the indefinite pronoun *ein(er)* could in principle be tested experimentally. For example, one could use a similar design to that of Experiments 2 and 3, but add adverbials to compare the influence of

grammatical role and topichood (Frey, 2004; see the discussion above). Part of an example item for such an experiment can be seen in (206).

- (206) Pia hat einen Tierpfleger erschreckt.
'Pia scared an animal keeper.'
- a. Bei den Pinguinen hat anscheinend **einer** Christoph angetippt.
*'At the penguins, apparently **one** tapped Christoph.'*
- b. Bei den Pinguinen hat **einer** anscheinend Christoph angetippt.
*'At the penguins, **one** apparently tapped Christoph.'*
- c. Bei den Pinguinen hat anscheinend Christoph **einen** angetippt.
*'At the penguins, apparently Christoph tapped **one**.'*
- d. Bei den Pinguinen hat Christoph anscheinend **einen** angetippt.
*'At the penguins, Christoph apparently tapped **one**.'*

In examples (206a) and (206b), the pronoun occurs in subject position, while in (206c) and (206d) it occurs in object position. However, in (206a) the pronoun occurs before the adverbial *anscheinend* ('apparently') and thus in topic position (Frey, 2004), while in (206b) it occurs after the adverbial and thus not in topic position. If we saw a difference in ratings between (206a, b) and (206c, d), this would support the influence of grammatical role, while a difference between (206a) and (206b) would support the influence of topichood. However, one would have to think about how to account for factor parallelism and whether this only concerns the factor grammatical role or topichood as well, as well as whether the topic status of the subject in sentences where the pronoun *ein(er)* occurs in object position could also have an influence (see the difference between (206c) and (206d)).

The current study focused on the factor grammatical role and its influence on the interpretation of an ambiguous pronoun *ein(er)*. The theoretical discussion as well as the experimental evidence illustrated the importance of the investigated factor, but there are probably more structural and discourse factors that influence the interpretation of an ambiguous pronoun *ein(er)*. At this point, I want to name only two examples. First, it seems reasonable to assume that prosody has an influence on the interpretation of *ein(er)*, as prosody is used to mark the discourse status of a noun phrase (e.g., Ladd, 1980; Cruttenden, 2006; Baumann & Riester, 2012) and thus could be able to differentiate between a partitive interpretation, which is weakly familiar, and a new referent interpretation. Second, coherence relationships could have an influence as well, as some studies

show that structural parallelism becomes more important if clauses are connected by resemblance relations (e.g., Kehler, 2002). However, these questions have to be left open for future work.

6.7 Summary

The goal of this chapter was to investigate influences of grammatical role on the interpretation of an ambiguous indefinite pronoun *ein(er)*. Therefore, I conducted two rating experiments focusing on anaphoric interpretations (the elliptic and the partitive interpretation) compared with the independent interpretation of *ein(er)*.

Section 6.2 presented a short literature review on the influence of grammatical role on the interpretation of ambiguous anaphoric expressions, discussing personal and other definite pronouns, different ellipsis phenomena, and anaphoric quantifiers. Grammatical role seems to influence the comprehension of every discussed anaphoric expression, but in the case of ellipsis this was an indirect effect due to locality and parallelism effects.

In section 6.3, building on these insights, I formulated predictions and discussed possible contexts for an experimental investigation of the influence of grammatical role on the interpretation of an ambiguous pronoun *ein(er)*. My main hypothesis, therefore, was that effects of grammatical role on the partitive interpretation of *ein(er)* should pattern with effects that were found for the interpretation of ambiguous personal pronouns, while effects on the elliptic interpretation should pattern with effects found for the interpretation of different ellipsis phenomena. Based on this assumption, I formulated individual testable hypotheses. Furthermore, I spent some time looking at different contexts that could be used in the experiments. I decided to investigate four types of context that differed either in the number of interpretations they allowed (those were tested in separate experiments) or in whether they especially favored an elliptic interpretation. The latter was done to overall boost elliptic interpretations and to ensure generalizability of the results.

Sections 6.4 and 6.5 then presented the set-up, items, procedure and results of my experiments, with section 6.4 presenting a rating study that compared the elliptic with the independent interpretation of *ein(er)*, and section 6.5 presenting a rating study that compared the partitive with the elliptic and independent interpretations of *ein(er)*. The results showed that the elliptic interpretation was increased if the pronoun and antecedent appeared in a parallel grammatical role or if the pronoun appeared in object position, while

the partitive interpretation was increased if it appeared in subject position. This effect was, however, only observable in the elliptic context.

Section 6.6 presented the general discussion, which linked the results to the findings and assumptions presented in the beginning of the chapter, compared discourse properties of the discussed interpretations of *ein(er)*, and mentioned some limitations of the studies. Overall, I argued that while some predicted effects were not observable in the experiments, the results could be taken as a confirmation of my main hypothesis.

The presented experimental data on the influence of grammatical role concludes this research on the semantic and pragmatic properties of the German indefinite pronoun *ein(er)*, which was chosen as a research object for this dissertation because it shows multiple interpretations. I have argued that, especially because of its anaphoric interpretations, studying *ein(er)* can teach us a lot about the role of indefinite pronouns in discourse. The research in this chapter supports this claim, showing that, just like for other pronouns, the interpretation of *ein(er)* is influenced by discourse or structural factors such as grammatical role. The following final chapter of this dissertation will summarize its main findings.

7 General Conclusion

The research in this dissertation contributes to a general understanding of pronouns in discourse. Whereas previous research mainly concentrated on personal or other definite pronouns, in this dissertation I focused on indefinite pronouns, investigating the semantic and pragmatic functions of the German indefinite pronoun *ein(er)*. It showed that *ein(er)* can be interpreted as context-dependent or independent, and as anaphoric or cataphoric, illustrating the importance of investigating indefinite pronouns when studying different types of discourse linking. In this final chapter, I will review the main claims and findings of my dissertation.

This dissertation focused on one particular German indefinite pronoun: *ein(er)*. It was argued that *ein(er)* is special among indefinite pronouns because of its many different interpretations. The goal of this dissertation was twofold, first to characterize *ein(er)* as a pronoun (i.e., to analyze its formal properties and to classify its different interpretations), and second, focusing on anaphoric interpretations of *ein(er)*, to show how indefinite pronouns take part in discourse linking.

The first two chapters of this dissertation focused on the first research goal: characterizing *ein(er)* as a pronoun. Chapter 2 discussed morphological properties of the pronoun such as inflection and dialectal variation and differentiated other wordforms with the same stem. The latter included, among others, the German indefinite article. In contrast to the pronoun, the article *ein(er)* is always followed by an overt NP. Looking at inflection, however, showed – with the exception of three cases – that the article shares an inflectional paradigm with the pronoun. Building on these observations, I furthermore argued that the pronoun *ein(er)* consists of the determiner *ein(er)* and a silent nominal. The described similarities between the indefinite article and the pronoun are therefore not coincidental: we deal with the same determiner that is followed by an overt NP in the case of the article and a covert NP in the case of the pronoun.

I then focused on different interpretations of the pronoun *ein(er)* and proposed a new classification of six interpretations: independent, impersonal, cataphoric, elliptic, participative, and lexicalized. I based this classification on semantic restrictions (for example, the independent interpretation can only refer to human referents) as well as discourse

requirements (for example, the partitive interpretation is only possible if there is a suitable set referent in the discourse or immediate environment) of the individual interpretations. One interesting pattern emerged from those considerations: I argued that the six interpretations of *ein(er)* can be differentiated along the lines of what kind of entity they refer to and how this meaning comes about. For some interpretations, the meaning is conventionalized (but depended on the inflection) while for other interpretations the meaning is determined by the context.

Linking formal considerations and the new classification of interpretations, I then argued that either the nominal slot can be filled by an empty noun or its meaning is determined by the context. Those two possibilities, which correspond to the distinction made above between conventionalized and context-dependent interpretations, plus additional lexicalization processes and pragmatic inferences can explain how the different interpretations of the pronoun *ein(er)* come about.

The purpose of Chapter 3 was to provide background information on indefinite pronouns, to show what properties make *ein(er)* as an indefinite pronoun so interesting, how it relates to similar expressions like the English pronoun *one*, and to use the obtained information on the semantics and pragmatics of indefinite pronouns to further characterize *ein(er)* and its six interpretations. The chapter illustrated how the term ‘indefinite pronoun’ is used for a number of different expressions which make up a quite heterogeneous class showing quite diverse semantic properties. This illustrates why *ein(er)* as a research object is actually so interesting: because of its multiple interpretations it still subsumes a large number of those properties as a single expression.

I then reviewed a study by Haspelmath (1997) proposing nine functions of indefinite pronouns (i.e., specific and known to speaker, specific and unknown to speaker, non-specific/ irrealis, question, conditional, comparative, indirect negation, direct negation, and free choice). Haspelmath argued that each series of indefinite pronouns in the languages of the world is used to fulfill a certain number of (adjacent) functions. Applying this information to the indefinite pronoun *ein(er)* showed that the assumptions made in the literature are in fact not true for every interpretation of the pronoun. Instead, I claimed that there is a wide range, from, for example, the partitive interpretation of *ein(er)* being able to fulfill the specific and known to speaker, specific and unknown to speaker, non-specific/ irrealis, question, conditional, and indirect negation functions, to the cataphoric interpretation only being allowed in contexts where the pronoun used is specific and known to the speaker.

Regarding the discourse properties of indefinite pronouns, it was argued that, depending on the context, not all indefinite pronouns even introduce discourse referents. However, if they do, the respective discourse referent is discourse-new and its identity is left unspecified. Again, the application of this to *ein(er)* showed diverging behavior of the individual interpretations. For example, while in the impersonal interpretation, *ein(er)* does not introduce a discourse referent, whereas in the cataphoric interpretation, anaphoric uptake is obligatory. In the end, these observations strengthened the view that the proposed six interpretations of *ein(er)* should be held apart, thus concluding the research section, which focused on characterizing *ein(er)* as a pronoun.

The second part of the dissertation focused on the anaphoric interpretations of *ein(er)*: the elliptic and the partitive interpretations. Note that the term ‘anaphoric’ was understood in a broader sense as referring to an element – referents but also events, time points, or NPs – in the discourse and therefore had to be differentiated from the term ‘coreferential’. I focused on anaphoric interpretations of *ein(er)* to illustrate how indefinite pronouns take part in discourse linking.

In Chapter 4, I argued that two anaphoric interpretations of the indefinite pronoun *ein(er)* have to be distinguished: a simple elliptic interpretation that is due to the ellipsis of a simple noun phrase, and a partitive interpretation which is based on a canonical partitive phrase where the partitive phrase is replaced by a partitive null proform. Building on the insight that reference in discourse is possible on (at least) two levels – on a textual level reference is made to linguistic expressions, and on the level of the mental discourse model reference is made to discourse referents – it was argued that the elliptic interpretation corresponds to the former and the partitive interpretation to the latter. Interestingly, the types of anaphoric relations established by *ein(er)* differ from those of definite pronouns (which establish a coreferential anaphoric relation on the level of the discourse model), with the elliptic interpretation referring anaphorically on the textual level and the partitive interpretation establishing a non-coreferential relation on the level of the discourse model. As it was argued that the pronoun *ein(er)* is a determiner followed by a covert noun, anaphoric interpretations of *ein(er)* were treated on par with anaphoric interpretations of other bare determiners, again assuming that elliptic and partitive interpretations have to be distinguished.

I presented data on the anaphoric behavior of the indefinite pronoun *ein(er)* to support the analysis (agreement patterns, pronouns as antecedents, and the missing antecedent

phenomena) and reviewed the two possibilities for a uniform analysis made in the literature: the noun phrase ellipsis approach assuming only NP-ellipsis for bare determiners (plus potential contextual restrictions in the partitive case), and the partitive approach which always assumes ellipsis of a partitive phrase. As neither account was able to explain all the data – contextual restrictions alone cannot account for the anaphoric behavior of the partitive interpretation, and not every context in which a bare determiner is used anaphorically shows partitivity – I concluded that a dual approach is needed when it comes to anaphoric interpretations of *ein(er)* and other bare determiners.

To further investigate how indefinite pronouns contribute to discourse linking, I conducted three experiments focusing on three interpretations of *ein(er)*: the partitive interpretation which establishes an anaphoric but not coreferential relation with an established discourse referent, the elliptic interpretation which (referring on a textual level) is anaphoric to a common noun phrase, and the independent interpretation which does not take part in anaphoric discourse linking. The experiments were presented in Chapters 5 and 6.

Chapter 5 concentrated on interpretational preferences in examples where *ein(er)* is in principle ambiguous between an elliptic, a partitive, and an independent interpretation. It was claimed that the different types of discourse linking involved affected interpretational preferences. As readers tend to adhere to principles of discourse coherence, continuity of discourse referents (i.e., referential linking) was claimed to be more important than other types of linking. I thus predicted that the partitive interpretation is a stronger competitor to an independent interpretation than the elliptic one and that the partitive interpretation is preferred over the elliptic if both anaphoric interpretations are available. The predictions were supported by a review of the research on the interpretation and processing of anaphoric quantifiers and then experimentally confirmed in a rating study.

I then investigated the question of how different types of discourse linking with *ein(er)* interact with grammatical role, which has been shown to have an influence on the processing of ellipsis as well as on referential linking. In the processing of ellipsis, it mainly stems from locality effects, while the research on personal pronouns has shown first that grammatical role influences the prominence of the antecedent which in turn influences the interpretation of a personal pronoun, and second that subjects are preferably interpreted as given. Furthermore, it has been noted that both ellipsis as well as personal pronouns prefer grammatical role parallelism with their antecedent. As partitives have not been investigated in this respect, I hypothesized that effects of grammatical role on the partitive interpretation would pattern with effects on personal pronouns.

Chapter 6 used the same experimental method that was used in Chapter 5. Testing both typical elliptic and typical partitive contexts, I asked how the position of the antecedent (subject or object), the position of the pronoun (again subject or object), as well as whether they are in a parallel grammatical role position affect the interpretation of an ambiguous pronoun *ein(er)*. Two experiments, the first focusing on the elliptic interpretation, the second focusing on the partitive interpretation, provided evidence that effects on the elliptic interpretation pattern with assumptions that are made for ellipsis, while in case of the partitive interpretation, results were more likely to pattern with assumptions for definite pronouns. Overall, the results showed that when it comes to understanding pronouns in discourse it is important to investigate a wide range of expressions. The experiments as well as other results of this dissertation illustrated that indefinite pronouns also take part in discourse linking and highlighted the importance of investigating different types of anaphoric relations to get a full understanding of reference in discourse.

All in all, the work in this dissertation has provided an original contribution to the research on indefinite pronouns and different types of discourse linking. It gave the first in depth investigation of structural, semantic, and pragmatic properties of the German indefinite pronoun *ein(er)*. I presented new experimental data that showed the importance of investigating different types of discourse linking and the role of indefinite pronouns in discourse. In the end, choosing *ein(er)* as a research object allowed me to bring together different topics and research questions, such as anaphoric reference, the structural makeup of pronouns, ellipsis, and partitivity, that previously had been mostly treated separately in the literature.

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Appendix A. Overview different functions of *ein(er)*

For each of the nine functions of indefinite pronouns by Haspelmath (1997), the following list gives a full paradigm of examples for each interpretation of the indefinite pronoun *ein(er)*, as discussed in section 3.4.1.

Interpretation <i>ein(er)</i>	Function possible	Example
Function: specific, known to speaker		
Independent	✗	#Ich muss los. Ich treffe einen zum Mittagessen. 'I have to go. I'm meeting <i>someone</i> for lunch.'
Impersonal	✗	N/A
Elliptic	✓	Weißt du was ein Professor so mag? Ich treffe einen zum Mittagessen. 'Do you know what a professor likes? I'm meeting <i>one</i> for lunch.'
Partitive	✓	Gestern habe ich drei Professorinnen kennengelernt. Heute treffe ich eine zum Mittagessen. 'Yesterday I met three professors. Today, I'm meeting <i>one</i> for lunch.'
Lexicalized	✗	#Peter hat draußen eine geraucht. Eigentlich wollte ich sie rauchen. 'Peter smoked <i>a cigarette</i> outside. Actually, I wanted to smoke it.'
Cataphoric	✓	Eines hatte Maria jedoch durchschaut: Peter hatte ein Geheimnis. ' <i>One thing</i> , however, Maria had seen through: Peter had a secret.'
Function: specific, unknown to speaker		
Independent	✓	Gestern hat einer angerufen. Ich weiß aber nicht wer. 'Yesterday, <i>someone</i> called. But I don't know who.'
Impersonal	✗	N/A
Elliptic	✓	Weißt du was ein Professor so mag? Peter trifft heute einen zum Mittagessen. Ich kenne ihn nicht. 'Do you know what a professor likes? Peter is meeting <i>one</i> for lunch. I don't know him.'
Partitive	✓	Peter hat gestern drei Professorinnen kennengelernt. Heute trifft er eine zum Mittagessen. Ich weiß aber nicht welche. ,Yesterday Peter met three professors. Today, he is meeting <i>one</i> for lunch. I don't know which one.'
Lexicalized	?	?Peter hat eine geraucht und sie dann auf dem Boden ausgedrückt. 'Peter smoked <i>a cigarette</i> and then put it out on the ground.'
Cataphoric	✗	# Eines hatte Maria jedoch durchschaut: Ich weiß nicht was. ' <i>One thing</i> , however, Maria had seen through: I don't know it.'

Function: non-specific, irrealis		
Independent	✓	Hätte einer angerufen, wäre ich rangegangen. 'If <i>someone</i> had called, I would have answered.'
Impersonal	✓	Wäre der Alarm losgegangen, hätte einen das gestört. 'If the alarm had gone off, it would have bothered <i>you</i> .'
Elliptic	✓	Weißt du was ein Professor mag? Ich würde gerne einen treffen. 'Do you know what a professor likes? I would like to meet <i>one</i> .'
Partitive	✓	Gestern habe ich drei Professorinnen kennengelernt. Vielleicht belege ich bei einer ein Seminar. 'Yesterday I met three professors. Maybe I'll attend a seminar with <i>one</i> .'
Lexicalized	✓	Hätte er eine geraucht, wäre ich sauer gewesen. 'If he had smoked <i>a cigarette</i> , I would have been pissed.'
Cataphoric	✗	#Ich hätte gerne eines gelernt, mir ist egal was. 'I wanted to learn <i>on thing</i> , I don't care what.'
Function: question		
Independent	✓	Kann mir einer helfen? 'Can <i>someone</i> help me?'
Impersonal	✓	Ist das für einen schädlich? 'Is that harmful to <i>you</i> ?'
Elliptic	✓	Gestern traf ich einen Professor. Kennst du auch einen ? 'Yesterday I met a professor. Do you know <i>one</i> too?'
Partitive	✓	Da vorne stehen drei Professorinnen. Kennst du eine ? 'There are three professors in front of you. Do you know <i>one</i> ?'
Lexicalized	✓	Sollen wir eine rauchen? 'Shall we smoke <i>a cigarette</i> ?'
Cataphoric	✗	# Hast du eines schon gehört? Peter hat ein Geheimnis. 'Have you heard <i>one thing</i> ? Peter has a secret.'
Function: conditional		
Independent	✓	Wenn du es einem erzählst, bestrafen wir dich. 'If you tell <i>someone</i> , we will punish you.'
Impersonal	✓	Wenn einen das Licht stört, kann man es hier ausmachen. 'If the light bothers <i>you</i> , you can turn it off here.'
Elliptic	✓	Wenn ich einen Professor treffe, kannst du auch einen treffen. 'If I meet a professor, you can meet <i>one</i> too.'
Partitive	✓	Wenn du drei Profs kennst, kannst du mir einen vorstellen. 'If you know three professors, you can introduce me to <i>one</i> .'
Lexicalized	✓	Wenn du eine rauchen gehst, sag mir Bescheid. 'If you go to smoke <i>a cigarette</i> , tell me.'
Cataphoric	✗	# Wenn du eines weißt sag mir Bescheid: Peter hat ein Geheimnis. 'If you know <i>one thing</i> , tell me: Peter has a secret.'

Function: comparative		
Independent	✗	# Peter kann schneller rennen als gestern einer gerannt ist. <i>'Peter can run faster than someone ran yesterday.'</i>
Impersonal	✗	# Das ärgert Peter genau so sehr wie es einen ärgert. <i>'This annoys Peter as much as it annoys you.'</i>
Elliptic	✗	# Meine Katze kann schneller rennen als gestern eine gerannt ist. <i>'My cat can run faster than one ran yesterday.'</i>
Partitive	✗	Der Napf gehört eigentlich drei Katzen. # Aber mein Hund kann den Napf schneller leer essen als es eine kann. <i>'The bowl actually belongs to three cats. But my dog finishes the bowl faster than one can.'</i>
Lexicalized	✗	N/A ¹⁸
Cataphoric	✗	# Das gefällt ihm besser als eines : Achterbahn fahren. <i>'He likes this better than one thing: riding roller coasters.'</i>
Function: indirect negation		
Independent	✓	Du kannst nicht kommen, ohne dass dich einer sieht. <i>'You can't come without someone seeing you.'</i>
Impersonal	✓	Das Programm reguliert das Licht ohne einen zu fragen. <i>'The program regulates the light without asking you.'</i>
Elliptic	✓	Gestern habe ich einen Professor kennengelernt. Man kann kaum über den Campus gehen ohne einem zu begegnen. <i>'Yesterday, I met a professor. You can barely walk around campus without meeting one.'</i>
Partitive	✓	Da vorne stehen drei Professorinnen. Wir können nicht vorbeigehen, ohne dass eine uns sieht. <i>'There are three professors. We can't pass without one noticing us.'</i>
Lexicalized	✓	Peter steht draußen ohne eine zu rauchen. <i>'Peter is standing outside without smoking a cigarette.'</i>
Cataphoric	✗	# Ich mache das nicht ohne eines : Peter soll mir helfen. <i>'I don't do this without one thing: Peter should help me.'</i>

¹⁸ For the lexicalized interpretation, only the full construction can be the standard of comparison as in *Das gefällt ihm besser als eine zu rauchen* ('He likes that better than smoking a cigarette').

Function: direct negation: Form <i>kein(er)</i>		
Independent	✓	Gestern hat keiner angerufen. <i>'Yesterday, nobody called.'</i>
Impersonal	✗	# Das ärgert keinen . (only independent interpretation) However: Das ärgert einen nicht. <i>'This doesn't annoy you.'</i>
Elliptic	✓	Gestern hat Peter einen Professor kennengelernt. Ich kenne leider keinen . <i>'Yesterday, Peter met a professor. Unfortunately, I know none.'</i>
Partitive	✓	Da vorne stehen drei Professorinnen. Ich kenne leider keine . <i>'There are three professors in front of us. I know none.'</i>
Lexicalized	?	Heute hat Peter Paul keine runtergehauen <i>'Today, Peter gave Paul no slap.'</i> # Peter ist keine rauchen <i>'Peter smoking no cigarette.'</i>
Cataphoric	✗	#Ich weiß keines : Peter hat mich belogen. <i>'I know no thing: Peter has lied to me.'</i>
Function: free choice: form <i>irgendein(er)</i>		
Independent	✓	Da kannst du irgendeinen fragen. <i>'You can ask anyone.'</i>
Impersonal	✗	# Das ärgert irgendeinen . (only independent interpretation) <i>'This annoys any of you.'</i>
Elliptic	✓	Kennst du einen Professor? Ich soll irgendeinen interviewen. <i>'Do you know a professor? I need to interview (any) one.'</i>
Partitive	✓	Da vorne stehen drei Professorinnen. Kennst du irgendeine ? <i>'There are three professors in front of us. Do you know anyone?'</i>
Lexicalized	✗	Paul ist irgendeine rauchen. <i>'Paul is smoking any cigarette.'</i>
Cataphoric	✗	#Ich weiß irgendeines : Peter hat mich belogen. <i>'I know anything: Peter has lied to me.'</i>

Appendix B. Experimental material

B.1 List of items from Experiment 1

The following section lists all experimental items from Experiment 1 that were designed to test interpretational preferences for an indefinite pronoun *ein(er)* that was either ambiguous between an elliptic and an independent interpretation or between an elliptic, a partitive and an independent interpretation. The experiment is described in detail in section 5.4.

1. Gestern herrschte im Freibad eine ausgelassene Stimmung. Alexander ging eine Runde schwimmen. Ein Bademeister saß in seiner Pause auf der Liegewiese. / Einige Bademeister saßen in ihrer Pause auf der Liegewiese. Weil die Sonne brannte, holte einer seine Sonnencreme und rieb sich nochmal ein.
Derjenige, der sich eincremt, ist eher...
ein Bademeister / einer der Bademeister kein Bademeister / eine andere Person
2. Das Schulfest war in vollem Gange. Anton verkaufte Waffeln und Limonade. Ein Oberstüfler bestellte etwas am Würstchenstand. / Vier Oberstüfler bestellten etwas am Würstchenstand. Als ein lauter Knall ertönte, fiel einer in Ohnmacht.
Derjenige, der in Ohnmacht fällt, ist eher...
ein Oberstüfler / einer der Oberstüfler kein Oberstüfler / eine andere Person
3. Das Openair-Konzert war wie immer gut besucht. Benjamin tanzte ausgelassen zur Musik. Ein Ordner stand bereits am Ausgang bereit. / Einige Ordner standen bereits am Ausgang bereit. Als das letzte Lied verklungen war, ließ einer einen Becher Bier fallen.
Derjenige, der einen Becher fallen lässt, ist eher...
ein Ordner / einer der Ordner kein Ordner / ein anderer Anwesender
4. In der Kneipe spielte abends eine angesagte Rockband. Benedikt hörte begeistert zu. Ein Holländer tanzte direkt vor der Bühne. / Drei Holländer tanzten direkt vor der Bühne. Als das Gitarrensolo einsetzte, warf einer begeistert seine Mütze in die Luft.
Derjenige, der seine Mütze wirft, ist eher...
ein Holländer / einer der Holländer kein Holländer / ein anderer Anwesender
5. Die Atmosphäre im Großraumbüro war sehr angespannt. Der Chef hatte Entlassungen angekündigt. Ein Abteilungsleiter saß nachdenklich am Kaffeetisch. / Ein paar Abteilungsleiter saßen nachdenklich am Kaffeetisch. Als ein Telefon klingelte, nahm einer ab und bat um Ruhe.
Derjenige, der das Telefon abnimmt, ist eher...
ein Abteilungsleiter / einer der Abteilungsleiter kein Abteilungsleiter / eine andere Person

Experimental Material

13. Es war Heiligabend und in der Kirche wurde ein Krippenspiel aufgeführt. Dennis bewunderte die große Tanne. Ein Messdiener wartete im hinteren Bereich auf den Klingelbeutel. / Zwei Messdiener warteten im hinteren Bereich auf den Klingelbeutel. Weil die Predigt heute sehr lang war, gähnte einer gelangweilt, hielt dann aber schnell die Hand vor den Mund.
Derjenige, der gähnen muss, ist eher ...
ein Messdiener / einer der Messdiener kein Messdiener / ein anderer Anwesender
14. Im Fußballstadion wurde zur Halbzeitpause gepfiffen. Dominik versuchte den Überblick zu behalten. Ein Student stellte sich am Bierstand an. / Ein paar Studenten stellte sich am Bierstand an. Weil ein lauter Gong ertönte, schaute einer verwundert auf seine Armbanduhr.
Derjenige, der auf die Uhr schaut, ist eher ...
ein Student / einer der Studenten kein Student / ein Anderer
15. Am Stuttgarter Flughafen herrschte bereits am frühen Morgen Betrieb. Erik überprüfte das Gewicht seines Koffers. Ein Pilot wartete vor der Sicherheitskontrolle. / Zwei Piloten warteten vor der Sicherheitskontrolle. Weil ein neuer Sicherheitsscanner geöffnet wurde, ging einer herüber und legte seinen Koffer auf das Band.
Derjenige, der seinen Koffer aufs Band legt, ist eher ...
ein Pilot / einer der Piloten kein Pilot / eine andere Person
16. Am Kölner Hauptbahnhof kam es mal wieder zu mehreren Verspätungen. Fabian studierte angestrengt die Anzeigetafel. Ein Schaffner stellte sich in den Raucherbereich. / Eine Gruppe Schaffner stellte sich in den Raucherbereich. Als eine Durchsage ertönte, schaute einer auf und hörte genau zu.
Derjenige, der genau zuhört, ist eher ...
ein Schaffner / einer der Schaffner kein Schaffner / ein anderer Anwesender
17. Im Kino lief heute ein neuer Actionfilm an. Viktoria aß genüsslich von ihren Nachos. Ein Schüler hatte sich in der letzten Reihe ausgebreitet. / Einige Schüler hatten sich in der letzten Reihe ausgebreitet. Obwohl die Werbung bereits begonnen hatte, stand einer auf und ging noch Popcorn holen.
Derjenige, der noch Popcorn holt, ist eher ...
ein Schüler / einer der Schüler kein Schüler / ein Anderer
18. In der neu eröffneten Pizzeria gab es neben Pizza auch leckere Nudelgerichte. Tanja schmeckte ihre Calzone ganz vorzüglich. Am Nebentisch las ein Architekt begeistert die ausführliche Speisekarte. / Am Nebentisch las eine Gruppe Architekten begeistert die ausführliche Speisekarte. Als der Kellner gerade eine Pizza aus der Küche brachte, stieß einer aus Versehen ein Bierglas um.
Derjenige, der das Glas umstößt, ist eher ...
ein Architekt / einer der Architekten kein Architekt / ein anderer Gast
19. Zur Mittagszeit bildeten sich in der Mensa lange Schlangen. Tabea holte sich Nudeln mit Tomatensoße. Ein Mathematiker bediente sich am Salatbuffet. / Einige Mathematiker bedienten sich am Salatbuffet. Als eine neue Ladung Lasagne gebracht wurde, drehte sich einer um und warf einen neidischen Blick herüber.
Derjenige, der neidisch rüber schaut, ist eher ...
ein Mathematiker / einer der Mathematiker kein Mathematiker / eine andere Person

20. Die Abendsonne im Rheinauhafen war grade untergegangen. Sophia schlenderte die Promenade entlang. Ein Skateboarder trank auf einer Parkbank ein Kölsch. / Ein paar Skateboarder tranken auf einer Parkbank ein Kölsch. Als eine Schiffshupe erklang, ärgerte sich einer und fluchte laut.
Derjenige, der flucht, ist eher ...
ein Skateboarder / einer der Skateboarder kein Skateboarder / eine andere Person
21. Die Busfahrt vom kleinen Dorf in die näher gelegene Stadt dauerte beinahe 20 Minuten. Sara spielte auf ihrem Smartphone. Ein Teenager plante ganz hinten den nächsten Freitagabend. Einige Teenager planten ganz hinten den nächsten Freitagabend. Weil der Bus endlich die Stadt erreicht hatte, schlug einer erleichtert die Hände zusammen.
Derjenige, der die Hände zusammenschlägt, ist eher ...
ein Teenager / einer der Teenager kein Teenager / ein anderer Wartender
22. Dank des guten Herbstwetters waren alle Tische vor dem kleinen Café gut gefüllt. Sandra saß unter dem Sonnenschirm und aß Torte. Ein Familienvater trank am Nebentisch Kaffee. / Einige Familienväter tranken am Nebentisch Kaffee. Als ein Auto mit quietschenden Reifen vorbeifuhr, schüttelte einer missbilligend den Kopf.
Derjenige, der den Kopf schüttelt, ist eher...
ein Familienvater / einer der Familienväter kein Familienvater / eine andere Person
23. Im Sauerland war am Wochenende Schützenfest. Sabine verfolgte gebannt das Vogelschießen. Ein Sanitäter rauchte am Rand eine Zigarette. / Einige Sanitäter rauchten am Rand eine Zigarette. Als lauter Jubel ertönte, schaute einer interessiert auf, um zu sehen, wer neuer Schützenkönig geworden war.
Derjenige, der interessiert aufschaut, ist eher ...
ein Sanitäter / einer der Sanitäter kein Sanitäter / eine andere Person
24. In den heißen Sommermonaten war die neue Eisdiele besonders beliebt. Rebekka bestellte sich ein Spaghettieis. Ein Wanderer bestaunte die Auswahl an der Eistheke. / Einige Wanderer bestaunten die Auswahl an der Eistheke. Als ein neuer Verkäufer kam, bestellte einer ein Bananensplit mit Schokostreuseln.
Derjenige, der ein Bananensplit bestellt, ist eher ...
ein Wanderer / einer der Wanderer kein Wanderer / ein anderer Kunde
25. Im Bürgeramt war die Stimmung angespannt. Ramona wollte sich Ummelden. Ein Bauarbeiter beschwerte sich am Schalter über die lange Wartezeit. / Zwei Bauarbeiter beschwerten sich am Schalter über die lange Wartezeit. Als der Nächste aufgerufen wurde, hielt einer seine Wartemarke in die Luft und ging rüber.
Derjenige, der seine Marke hochhält, ist eher ...
ein Bauarbeiter / einer der Bauarbeiter kein Bauarbeiter / ein anderer Anwesender
26. Der Englischkurs der Volkshochschulkurs erfreute sich wie immer großer Beliebtheit. Die Lehrerin besprach heute das Thema Präpositionen. Ein Streber in der ersten Reihe notierte sich fleißig die neuen Vokabeln. / Drei Streber in der ersten Reihe notierten sich fleißig die neuen Vokabeln. Als am Fenster ein Vogel vorbeiflog, schaute einer überrascht auf und bewunderte das Tier.
Derjenige, der den Vogel bewundert, ist eher ...
ein Streber / einer der Streber kein Streber / eine andere Person

Experimental Material

27. Die Bäckerei in München war für ihre hausgemachten Brezeln bekannt. Patricia wartete genervt, bis sie drankam. Hinten in der Schlange stand ein Tourist. / Hinten in der Schlange standen zwei Touristen. Als ein Backblech laut schepperte, ließ einer vor Schreck sein Kleingeld fallen.

Derjenige, der sein Geld fallen lässt, ist eher ...

ein Tourist / einer der Touristen

kein Tourist / ein anderer Anwesender

28. In der Grillsaison herrschte beim örtlichen Metzger ungewohnt hoher Andrang. Nina überlegte, was sie am besten kaufen sollte. Ein Verkäufer versuchte seine Bestellungen möglichst schnell in die Kasse einzugeben. / Drei Verkäufer versuchten ihre Bestellungen möglichst schnell in die Kasse einzugeben. Als die Grillwürste ausgingen, schien einer davon sehr überrascht zu sein.

Derjenige, der überrascht ist, ist eher ...

ein Verkäufer / einer der Verkäufer

kein Verkäufer / ein anderer Anwesender

29. Die Klima-Demonstration sollte gleich starten. Natalie packte ihr selber gebasteltes Plakat aus. Ein Polizist positionierte sich am Straßenrand. / Mehrere Polizisten positionierten sich am Straßenrand. Obwohl es eigentlich ein milder Tag war, zog sich einer noch eine dicke Jacke drüber.

Derjenige, der eine Jacke anzieht, ist eher ...

ein Polizist / einer der Polizisten

kein Polizist / eine andere Person

30. Am Sonntagabend wurde ein prunkvoller Empfang im Rathaus veranstaltet. Der Bürgermeister begrüßte alle Gäste persönlich. Ein Geschäftsmann begutachtete das Gemälde neben dem Eingang. / Zwei Geschäftsmänner begutachteten das Gemälde neben dem Eingang. Als beim Öffnen eine Sektflasche wild spritzte, musste einer lauthals lachen und hielt sich den Bauch.

Derjenige, der lauthals lacht, ist eher ...

ein Geschäftsmann / einer der Geschäftsmänner

kein Geschäftsmann / eine andere Person

31. Das Naturkundemuseum war vor allem bei Schulklassen beliebt. Maria las interessiert in einem Flyer. Ein Lehrer betrachtete das riesige Dinosaurierskelett genauer. / Zwei Lehrer betrachteten das riesige Dinosaurierskelett genauer. Obwohl noch genug Zeit für die Ausstellung war, ging einer in die Cafeteria, um eine Limonade zu trinken.

Derjenige, der in die Cafeteria geht, ist eher ...

ein Lehrer / einer der Lehrer

kein Lehrer / eine andere Person

32. Am verkaufsoffenen Sonntag war es brechend voll auf der Schildergasse. Lisa hoffte ein paar gute Schnäppchen zu machen. Ein Straßenmusiker spielte vor einem Schuhgeschäft. / Zwei Straßenmusiker spielten vor einem Schuhgeschäft. Als es anfang zu regnen, holte einer aus seinem Rucksack ein knallgelbes Regencap heraus.

Derjenige, der sein Cape rausholt, ist eher ...

ein Straßenmusiker / einer der Straßenmusiker

kein Straßenmusiker / ein anderer Anwesender

B.2 List of items from Experiment 2

The following section lists all experimental items from Experiment 2 that were designed to investigate the influence of grammatical role on the interpretation of an indefinite pronoun *ein(er)* that was ambiguous between an elliptic and an independent interpretation. The list presents all items in the conditions grammatical role of the antecedent ‘subject’ and grammatical role of the pronoun ‘object’ but includes both context types (‘elliptic’ and ‘neutral’). The experiment is described in detail in section 6.4.

1. Jana und Alexander sind am Wochenende ins Freibad gegangen. Nach dem Mittagessen haben sie sich eine Weile an den Beckenrand gesetzt. Ein Bademeister hat Jana zugewunken und auf dem Weg zu den Toiletten hat Alexander einem zugewunken. / Ein Bademeister hat Jana nachgeschaut. Auf dem Weg zu den Toiletten hat Alexander einem zugewunken. Denn ...
Derjenige, dem Alexander zuwinkt ist eher...
ein Bademeister / kein Bademeister
2. Anton und Paula mussten am Wochenende auf dem Schulfest helfen. Als Ehemalige haben sie Waffeln und Limonade verkauft. Ein Abiturient hat Anton unterstützt und in der zweiten Schicht hat Paula einen unterstützt. / Ein Abiturient hat Anton eingearbeitet. In der zweiten Schicht hat Paula einen unterstützt. Tatsächlich ...
Derjenige, den Paula unterstützt, ist eher...
ein Abiturient / kein Abiturient
3. Katja und Benjamin waren letzte Woche auf einem Open-Air-Konzert. Wie immer haben sie ausgelassen zur Musik getanzt. Ein Betrunkener hat Katja angerempelt und nach dem Konzert hat Benjamin einen angerempelt. / Ein Betrunkener hat Katja beschimpft. Nach dem Konzert hat Benjamin einen angerempelt. Deswegen ...
Derjenige, den Benjamin anrempelt, ist eher...
ein Betrunkener / kein Betrunkener
4. Benedikt und Anna haben Samstag Abend ein paar Kölsch im Brauhaus in der Altstadt getrunken. Im Laufe des Abends wurde die Stimmung immer aufgeheizter. Ein Holländer hat Benedikt beschimpft und beim Aufbrechen hat Anna einen beschimpft. / Ein Holländer hat Benedikt verspottet. Beim Aufbrechen hat Anna einen beschimpft. Sofort ...
Derjenige, den Anna beschimpft, ist eher...
ein Holländer / kein Holländer
5. Nach dem Umbau arbeiteten Hans und Hannah in einem Großraumbüro. In der Kaffeepause sprachen sie über die neue Situation. Ein Abteilungsleiter ermunterte Hans und als die Pause vorbei war, ermunterte Hannah einen. / Ein Abteilungsleiter befragte Hans. Als die Pause vorbei war, ermunterte Hannah einen. Daraufhin ...
Derjenige, den Hannah ermuntert, ist eher...
ein Abteilungsleiter / kein Abteilungsleiter

Experimental Material

6. Sebastian und Stefanie hatten sich wie jeden Dienstag im Fitnessstudio getroffen. Gemeinsam trainierten sie an den Geräten. Ein Bodybuilder hat Sebastian angesprochen und nach dem Training hat Stefanie einen angesprochen. / Ein Bodybuilder hat Sebastian beeindruckt. Nach dem Training hat Stefanie einen angesprochen. Anscheinend ...
Derjenige, den Stefanie anspricht, ist eher...
ein Bodybuilder / kein Bodybuilder
7. Am Wochenende konnten Christian und Lucy endlich den neu eröffneten Abenteuerspielplatz ausprobieren. Sie waren vor allem von der Hüpfburg begeistert. Ein Anwohner hat Christian angefeuert und an der Seilbahnrutsche hat Lucy einen angefeuert. / Ein Anwohner hat Christian belehrt. An der Seilbahnrutsche hat Lucy einen angefeuert. Leider ...
Derjenige, den Lucy anfeuert, ist eher...
ein Anwohner / kein Anwohner
8. Am Wochenende haben Pia und Christoph den Kölner Zoo besucht. Vor dem Elefantengehege blieben sie eine ganze Weile stehen. Ein Tierpfleger hat Pia angetippt und bei den Pinguinen hat Christoph einen angetippt. / Ein Tierpfleger hat Pia erschreckt. Bei den Pinguinen hat Christoph einen angetippt. Weil ...
Derjenige, den Christoph antippt, ist eher...
ein Tierpfleger / kein Tierpfleger
9. Am Samstag sind Lars und Annette in die Oper gegangen. Vorher haben sie im Foyer noch ein Glas Sekt getrunken. Ein Rentner hat Lars begrüßt und nach der Vorstellung hat Annette einen begrüßt. / Ein Rentner hat Lars informiert. Nach der Vorstellung hat Annette einen begrüßt. Danach ...
Derjenige, den Annette grüßt, ist eher...
ein Rentner / kein Rentner
10. Am Rosenmontag haben sich Clemens und Anne den Karnevalsumzug angeschaut. Begeistert haben sie Kamelle gesammelt. Ein Clown hat Clemens weggestoßen und als ein großer Wagen kam, hat Anne einen weggestoßen. / Ein Clown hat Clemens beneidet. Als ein großer Wagen kam, hat Anne einen weggestoßen. Leider ...
Derjenige, den Anne wegstößt, ist eher...
ein Clown / kein Clown
11. Im Familiengericht nahmen Daniel und Nadja auf den Besucherbänken Platz. Sie wollten auch einmal eine Gerichtsverhandlung miterleben. Ein Rechtsanwalt begrüßte Daniel und nach der Verhandlung begrüßte Nadja einen. / Ein Rechtsanwalt musterte Daniel. Nach der Verhandlung begrüßte Nadja einen. Anscheinend ...
Derjenige, den Nadja begrüßt, ist eher...
ein Rechtsanwalt / kein Rechtsanwalt
12. David und Tina haben das Konzert einer angesagten Schlagerband in der Stadthalle besucht. In der Pause holten sie sich an der Bar ein Bier. Ein Techniker hat David angetippt und als das Konzert weiterging, hat Tina einen angetippt. / Ein Techniker hat David beobachtet. Als das Konzert weiterging, hat Tina einen angetippt. Anstatt ...
Derjenige, den Tina antippt, ist eher ...
ein Techniker/ kein Techniker

13. An Heiligabend sind Dennis und Katharina zur Messe in die Kirche gegangen. Nach dem Krippenspiel wurde zunächst ein Lied gesungen. Ein Messdiener beobachtete Dennis und während der Predigt beobachtete Katharina einen. / Ein Messdiener lächelte Dennis an. Während der Predigt beobachtete Katharina einen. Anstatt ...
Derjenige, den Katharina beobachtet, ist eher ...
ein Messdiener / kein Messdiener
14. Letztes Wochenende haben Johanna und Dominik das Fußballspiel im Stadion geschaut. Begeistert fieberten sie mit ihrer Mannschaft mit. Ein Student hat Johanna zugewunken und in der Halbzeitpause hat Dominik einem zugewunken. / Ein Student hat Johanna widersprochen. In der Halbzeitpause hat Dominik einem zugewunken. Deswegen ...
Derjenige, dem Dominik zuwinkt, ist eher ...
ein Student / kein Student
15. In den Sommerferien wollten Theresa und Erik nach Thailand fliegen. Am Flughafen mussten sie sehr lange vor der Gepäckkontrolle warten. Ein Sicherheitsbeamter hat Theresa angerempelt und am Gate hat Erik einen angerempelt. / Ein Sicherheitsbeamter hat Theresa aufgemuntert. Am Gate hat Erik einen angerempelt. Trotzdem ...
Derjenige, den Erik anrempelt, ist eher ...
ein Sicherheitsbeamter / kein Sicherheitsbeamter
16. Am Montagmorgen standen Finn und Gabi genervt am Kölner Hauptbahnhof. Sie mussten mal wieder ewig auf ihren Zug warten. Ein Düsseldorfer hat Finn getröstet und im Raucherbereich hat Gabi einen getröstet. / Ein Düsseldorfer hat Finn belehrt. Im Raucherbereich hat Gabi einen getröstet. Daraufhin ...
Derjenige, den Gabi tröstet, ist eher ...
ein Düsseldorfer / kein Düsseldorfer
17. Am Wochenende sind Viktoria und Andreas endlich mal wieder ins Kino gegangen. Ihre Plätze waren genau in der Mitte der letzten Reihe. Ein Schüler hat Viktoria erkannt und als die Werbung begann, hat Andreas einen erkannt. / Ein Schüler hat Viktoria vorbeigelassen. Als die Werbung begann, hat Andreas einen erkannt. Deshalb ...
Derjenige, den Andreas erkennt, ist eher ...
ein Schüler / kein Schüler
18. Am Dienstag haben Tanja und Frank eine Pizzeria in der Frankfurter Innenstadt ausprobiert. Beide haben sich eine Pizza Calzone bestellt. Ein Bäcker sprach Tanja an und nach dem Essen sprach Frank einen an. / Ein Bäcker beriet Tanja. Nach dem Essen sprach Frank einen an. Allerdings ...
Derjenige, den Frank anspricht, ist eher ...
ein Bäcker / kein Bäcker
19. In der Mittagszeit gingen Tabea und Norbert in die Mensa. Sie wollten heute mal etwas Gesundes essen. Ein Mathematiker hat Tabea vorgelassen und an der Kasse hat Norbert einen vorgelassen. / Ein Mathematiker hat Tabea beraten. An der Kasse hat Norbert einen vorgelassen. Deshalb ...
Derjenige, den Norbert vorlässt, ist eher ...
ein Mathematiker / kein Mathematiker

Experimental Material

20. Am Sonntagabend sind Sophia und Raphael die Promenade im Rheinauhafen entlanggeschlendert. An einer Pommestube haben sie sich einen Snack geholt. Ein Skateboarder ist Sophia ausgewichen und auf dem Rückweg ist Raphael einem ausgewichen. / Ein Skateboarder hat Sophia zugenickt. Auf dem Rückweg ist Raphael einem ausgewichen. Also ...
Derjenige, dem Raphael ausweicht, ist eher ...
ein Skateboarder / kein Skateboarder
21. Sara und Diego haben gestern den Bus in die näheregelegene Stadt genommen. Ganz hinten haben sie noch zwei freie Plätze gefunden. Ein Teenager hat Sara nachgeahmt. Vor dem Aussteigen hat Diego einen gemustert. / Sara hat einen Teenager gemustert und vor dem Aussteigen hat Diego einen gemustert. Dann ...
Derjenige, den Diego mustert, ist eher ...
ein Teenager / kein Teenager
22. Am Nachmittag sind Sandra und Karl in das kleine Café gegangen. Sie haben sich sogar ein Stück Torte zu ihrem Kaffee gegönnt. Ein Familienvater hat Sandra angelächelt und nach der Torte hat Karl einen angelächelt. / Ein Familienvater hat Sandra beneidet. Nach der Torte hat Karl einen angelächelt. Obwohl ...
Derjenige, den Karl anlächelt, ist eher...
ein Familienvater / kein Familienvater
23. Wie jedes Jahr haben Sabine und Claudius das Schützenfest im Nachbardorf besucht. Gebannt haben sie das Vogelschießen verfolgt. Ein Sanitäter hat Sabine eine Zigarette angeboten und nach ein paar Stunden hat Claudius einem eine Zigarette angeboten. / Ein Sanitäter hat Sabine ein Kompliment gemacht. Nach ein paar Stunden hat Claudius einem eine Zigarette angeboten. Also ...
Derjenige, dem Claudius eine Zigarette anbietet, ist eher ...
ein Sanitäter / kein Sanitäter
24. In den heißen Sommermonaten sind Rebekka und Ben jede Woche in die neue Eisdielerie gegangen. Gestern war wieder besonders viel los. Ein Kellner hat Rebekka fast umgerannt und nach dem Bezahlen hat Ben einen fast umgerannt. / Ein Kellner hat Rebekka angesprochen. Nach dem Bezahlen hat Ben einen fast umgerannt. Denn ...
Derjenige, den Ben fast umrennt, ist eher ...
ein Kellner / kein Kellner
25. Nach dem Umzug mussten sich Ramona und Peter im Bürgeramt ummelden. Leider mussten sie erstmal im Wartezimmer Platz nehmen. Ein Bauarbeiter beschwerte sich bei Ramona und nach einer Stunde Warten beschwerte sich Peter bei einem. / Ein Bauarbeiter entschuldigte sich bei Ramona. Nach einer Stunde Warten beschwerte sich Peter bei einem. Denn ...
Derjenige, bei dem sich Peter beschwert, ist eher ...
ein Bauarbeiter / kein Bauarbeiter
26. Um ihr Englisch aufzubessern haben Janina und Fabian einen Volkshochschulkurs belegt. Heute behandelten sie das Thema Präpositionen. Ein Streber hat Janina zugehört und während der Gruppenübung hat Fabian einem zugehört. / Ein Streber hat Janina geholfen. Während der Gruppenübung hat Fabian einem zugehört. Danach ...
Derjenige, dem Fabian zuhört, ist eher ...
ein Streber / kein Streber

27. Während des Wochenendausflugs nach München sind Patricia und Bernd in eine bekannte Bäckerei gegangen. Sie wollten unbedingt die berühmten Brezeln probieren. Ein Tourist hat Patricia vorgelassen und beim Verlassen der Bäckerei hat Bernd einen vorgelassen. / Ein Tourist hat Patricia fotografiert. Beim Verlassen der Bäckerei hat Bernd einen vorgelassen. Daher ...
Derjenige, den Bernd vorlässt, ist eher ...
ein Tourist / kein Tourist
28. In der Grillsaison gingen Nina und Hannes zum örtlichen Metzger. Sie wollten Fleisch und Würstchen für die morgige Party kaufen. Ein Verkäufer hat Nina zugezwinkert und nach dem Bezahlen hat Hannes einem zugezwinkert. / Ein Verkäufer hat Nina geantwortet. Nach dem Bezahlen hat Hannes einem zugezwinkert. Allerdings ...
Derjenige, dem Hannes zuzwinkert, ist eher ...
ein Verkäufer / kein Verkäufer
29. Nathalie und Thomas waren am Freitag auf der Klima-Demonstration. Gespannt warteten sie auf den Beginn der Kundgebung. Ein Polizist hat Nathalie überholt und als die Demonstration sich in Bewegung setzte, hat Thomas einen überholt. / Ein Polizist hat Nathalie informiert. Als die Demonstration sich in Bewegung setzte, hat Thomas einen überholt. Weil ...
Derjenige, den Thomas überholt, ist eher ...
ein Polizist / kein Polizist
30. Daniela und Jan waren am Mittwoch bei einem Empfang im Rathaus eingeladen. Sie hatten sich im letzten Jahr wiederholt ehrenamtlich engagiert. Ein Geschäftsmann hat Daniela ausgefragt und nach der Rede des Bürgermeisters hat Jan einen ausgefragt. / Ein Geschäftsmann hat Daniela bewundert. Nach der Rede des Bürgermeisters hat Jan einen ausgefragt. Obwohl ...
Derjenige, den Jan ausfragt, ist eher ...
ein Geschäftsmann / kein Geschäftsmann
31. Am Montag haben Maria und Michael das Naturkundemuseum besucht. Interessiert betrachteten sie das riesige Dinosaurierskelett genauer. Ein Lehrer hat Maria eine Frage gestellt und in der Cafeteria hat Michael einem eine Frage gestellt. / Ein Lehrer hat Maria einen Flyer gegeben. In der Cafeteria hat Michael einem eine Frage gestellt. Tatsächlich ...
Derjenige, dem Michael eine Frage stellt, ist eher ...
ein Lehrer / kein Lehrer
32. Lisa und Max wollten letztes Wochenende ihre Weihnachtseinkäufe erledigen. Auf der Schildergasse drängten sie sich durch die Masse. Ein Straßenmusiker hat Lisa erschreckt und vor einem Schuhgeschäft hat Max einen erschreckt. / Ein Straßenmusiker hat Lisa erkannt. Vor einem Schuhgeschäft hat Max einen erschreckt. Sofort ...
Derjenige, den Max erschreckt, ist eher ...
ein Straßenmusiker / kein Straßenmusiker

B.3 List of items from Experiment 3

The following section lists all experimental items from Experiment 3 that were designed to investigate the influence of grammatical role on the interpretation of an indefinite pronoun *ein(er)* that was ambiguous between a partitive, an elliptic and an independent interpretation. The list presents all items in the conditions grammatical role of the antecedent ‘object’ and grammatical role of the pronoun ‘object’ but includes both context types (‘elliptic’ and ‘neutral’). The experiment is described in detail in section 6.5.

1. Jana und Alexander sind am Wochenende ins Freibad gegangen. Nach dem Mittagessen haben sie sich eine Weile an den Beckenrand gesetzt. Jana hat zwei Bademeistern zugewunken und auf dem Weg zu den Toiletten hat Alexander einem zugewunken. / Jana hat zwei Bademeistern nachgeschaut. Auf dem Weg zu den Toiletten hat Alexander einem zugewunken. Denn ...
Derjenige, dem Alexander zuwinkt ist eher...
einer der zwei Bademeister / eine andere Person
2. Anton und Paula mussten am Wochenende auf dem Schulfest helfen. Als Ehemalige haben sie Waffeln und Limonade verkauft. Anton hat drei Abiturienten unterstützt und in der zweiten Schicht hat Paula einen unterstützt. / Anton hat drei Abiturienten eingearbeitet. In der zweiten Schicht hat Paula einen unterstützt. Tatsächlich ...
Derjenige, den Paula unterstützt, ist eher...
einer der drei Abiturienten / eine andere Person
3. Katja und Benjamin waren letzte Woche auf einem Open-Air-Konzert. Wie immer haben sie ausgelassen zur Musik getanzt. Katja hat zwei Betrunkene angerempelt und nach dem Konzert hat Benjamin einen angerempelt. / Katja hat zwei Betrunkene beschimpft. Nach dem Konzert hat Benjamin einen angerempelt. Deswegen ...
Derjenige, den Benjamin anrempelt, ist eher...
einer der zwei Betrunkenen / eine andere Person
4. Benedikt und Anna haben Samstag Abend ein paar Kölsch im Brauhaus in der Altstadt getrunken. Im Laufe des Abends wurde die Stimmung immer aufgeheizter. Benedikt hat vier Holländer beschimpft und an der Bahnhaltestelle hat Anna einen beschimpft. / Benedikt hat vier Holländer verspottet. An der Bahnhaltestelle hat Anna einen beschimpft. Sofort ...
Derjenige, den Anna beschimpft, ist eher...
einer der vier Holländer / eine andere Person
5. Nach dem Umbau arbeiteten Hans und Hannah in einem Großraumbüro. In der Kaffeepause sprachen sie über die neue Situation. Hans ermunterte zwei Abteilungsleiter und nach Feierabend ermunterte Hannah einen. / Hans befragte zwei Abteilungsleiter. Nach Feierabend ermunterte Hannah einen. Daraufhin ...
Derjenige, den Hannah ermuntert, ist eher...
einer der zwei Abteilungsleiter / eine andere Person

6. Sebastian und Stefanie hatten sich wie jeden Dienstag im Fitnessstudio getroffen. Gemeinsam trainierten sie an den Geräten. Sebastian hat drei Bodybuilder angesprochen und am Laufband hat Stefanie einen angesprochen. / Sebastian hat drei Bodybuilder bewundert. Am Laufband hat Stefanie einen angesprochen. Anscheinend ...
Derjenige, den Stefanie anspricht, ist eher...
einer der drei Bodybuilder / eine andere Person
7. Am Wochenende konnten Christian und Lucy endlich den neu eröffneten Abenteuerspielplatz ausprobieren. Sie waren vor allem von der Hüpfburg begeistert. Christian hat vier Anwohner angefeuert und an der Seilbahnrutsche hat Lucy einen angefeuert. / Christian hat vier Anwohner belehrt. An der Seilbahnrutsche hat Lucy einen angefeuert. Leider ...
Derjenige, den Lucy anfeuert, ist eher...
einer der vier Anwohner / eine andere Person
8. Am Wochenende haben Pia und Christoph den Kölner Zoo besucht. Vor dem Elefantengehege blieben sie eine ganze Weile stehen. Pia hat zwei Tierpfleger kennengelernt und bei den Pinguinen hat Christoph einen kennengelernt. / Pia hat zwei Tierpfleger erschreckt. Bei den Pinguinen hat Christoph einen kennengelernt. Weil ...
Derjenige, den Christoph kennenlernt, ist eher...
einer der zwei Tierpfleger / eine andere Person
9. Am Samstag sind Lars und Annette in die Oper gegangen. Vorher haben sie im Foyer noch ein Glas Sekt getrunken. Lars hat drei Rentner begrüßt und nach der Vorstellung hat Annette einen begrüßt. / Lars hat drei Rentner informiert. Nach der Vorstellung hat Annette einen begrüßt. Danach ...
Derjenige, den Annette grüßt, ist eher...
einer der drei Rentner / eine andere Person
10. Am Rosenmontag haben sich Clemens und Anne den Karnevalsumzug angeschaut. Begeistert haben sie Kamelle gesammelt. Clemens hat vier Clowns weggestoßen und als ein großer Wagen kam, hat Anne einen weggestoßen. / Clemens hat vier Clowns beneidet. Als ein großer Wagen kam, hat Anne einen weggestoßen. Leider ...
Derjenige, den Anne wegstößt, ist eher...
einer der vier Clowns / eine andere Person
11. Im Familiengericht nahmen Daniel und Nadja auf den Besucherbänken Platz. Sie wollten auch einmal eine Gerichtsverhandlung miterleben. Daniel begrüßte drei Rechtsanwälte und in der Gerichtscafeteria begrüßte Nadja einen. / Daniel musterte drei Rechtsanwälte. In der Gerichtscafeteria begrüßte Nadja einen. Anscheinend ...
Derjenige, den Nadja begrüßt, ist eher...
einer der drei Rechtsanwälte / eine andere Person
12. David und Tina haben das Konzert einer angesagten Schlagerband in der Stadthalle besucht. In der Pause holten sie sich an der Bar ein Bier. David hat zwei Techniker belustigt und nach dem Konzert hat Tina einen belustigt. / David hat zwei Techniker beobachtet. Nach dem Konzert hat Tina einen belustigt. Anstatt ...
Derjenige, den Tina belustigt, ist eher ...
einer der zwei Techniker / eine andere Person

Experimental Material

13. An Heiligabend sind Dennis und Katharina zur Messe in die Kirche gegangen. Nach dem Krippenspiel wurde zunächst ein Lied gesungen. Dennis beobachtete vier Messdiener und während der Predigt beobachtete Katharina einen. / Dennis lächelte vier Messdiener an. Während der Predigt beobachtete Katharina einen. Anstatt ...
Derjenige, den Katharina beobachtet, ist eher ...
einer der vier Messdiener / eine andere Person
14. Letztes Wochenende haben Johanna und Dominik das Fußballspiel im Stadion geschaut. Begeistert fieberten sie mit ihrer Mannschaft mit. Johanna hat drei Studenten zugewunken und in der Halbzeitpause hat Dominik einem zugewunken. / Johanna hat drei Studenten widersprochen. In der Halbzeitpause hat Dominik einem zugewunken. Deswegen ...
Derjenige, dem Dominik zuwinkt, ist eher ...
einer der drei Studenten / eine andere Person
15. In den Sommerferien wollten Theresa und Erik nach Thailand fliegen. Am Flughafen mussten sie sehr lange vor der Gepäckkontrolle warten. Theresa hat zwei Sicherheitsbeamte belustigt und am Gate hat Erik einen belustigt. / Theresa hat zwei Sicherheitsbeamte befragt. Am Gate hat Erik einen belustigt. Trotzdem ...
Derjenige, den Erik belustigt, ist eher ...
einer der zwei Sicherheitsbeamten / eine andere Person
16. Am Montagmorgen standen Finn und Gabi genervt am Kölner Hauptbahnhof. Sie mussten mal wieder ewig auf ihren Zug warten. Finn hat drei Düsseldorfer getröstet und im Raucherbereich hat Gabi einen getröstet. / Finn hat drei Düsseldorfer belehrt. Im Raucherbereich hat Gabi einen getröstet. Daraufhin ...
Derjenige, den Gabi tröstet, ist eher ...
einer der drei Düsseldorfer / eine andere Person
17. Am Wochenende sind Viktoria und Andreas endlich mal wieder ins Kino gegangen. Ihre Plätze waren genau in der Mitte der letzten Reihe. Viktoria hat vier Schüler erkannt und als die Werbung begann, hat Andreas einen erkannt. / Viktoria hat vier Schüler vorbeigelassen. Als die Werbung begann, hat Andreas einen erkannt. Deshalb ...
Derjenige, den Andreas erkennt, ist eher ...
einer der Schüler / eine andere Person
18. Am Dienstag haben Tanja und Frank eine Pizzeria in der Frankfurter Innenstadt ausprobiert. Beide haben sich eine Pizza Calzone bestellt. Tanja sprach zwei Bänker an und nach dem Essen sprach Frank einen an. / Tanja beriet zwei Bänker. Nach dem Essen sprach Frank einen an. Allerdings ...
Derjenige, den Frank anspricht, ist eher ...
einer der Bänker / eine andere Person
19. In der Mittagszeit gingen Tabea und Norbert in die Mensa. Sie wollten heute mal etwas Gesundes essen. Tabea hat drei Mathematiker vorgelassen und an der Kasse hat Norbert einen vorgelassen. / Tabea hat drei Mathematiker beraten. An der Kasse hat Norbert einen vorgelassen. Deshalb ...
Derjenige, den Norbert vorlässt, ist eher ...
einer der Mathematiker / eine andere Person

20. Am Sonntagabend sind Sophia und Raphael die Promenade im Rheinauhafen entlanggeschlendert. An einer Pommestube haben sie sich einen Snack geholt. Sophia ist zwei Skateboardern ausgewichen und auf dem Rückweg ist Raphael einem ausgewichen. / Sophia hat zwei Skateboardern zugewinkelt. Auf dem Rückweg ist Raphael einem ausgewichen. Also ...
Derjenige, dem Raphael ausweicht, ist eher ...
einer der Skateboarder / eine andere Person
21. Sarah und Diego haben gestern den Bus in die nähere Stadt genommen. Ganz hinten haben sie noch zwei freie Plätze gefunden. Sarah hat einige Teenager gemustert und vor dem Aussteigen hat Diego einen gemustert. / Sarah hat einige Teenager nachgeahmt. Vor dem Aussteigen hat Diego einen gemustert. Dann ...
Derjenige, den Diego mustert, ist eher ...
einer der Teenager / eine andere Person
22. Am Nachmittag sind Sandra und Karl in das kleine Café gegangen. Sie haben sich sogar ein Stück Torte zu ihrem Kaffee gegönnt. Sandra hat zwei Familienväter angelächelt und nach der Torte hat Karl einen angelächelt. / Sandra hat zwei Familienväter beneidet. Nach der Torte hat Karl einen angelächelt. Obwohl ...
Derjenige, den Karl anlächelt, ist eher ...
einer der Familienväter / eine andere Person
23. Wie jedes Jahr haben Sabine und Claudius das Schützenfest im Nachbardorf besucht. Gebannt haben sie das Vogelschießen verfolgt. Sabine hat ein paar Sanitätern eine Zigarette angeboten und nach ein paar Stunden hat Claudius einem eine Zigarette angeboten. / Sabine hat ein paar Sanitätern ein Kompliment gemacht. Nach ein paar Stunden hat Claudius einem eine Zigarette angeboten. Also ...
Derjenige, dem Claudius eine Zigarette anbietet, ist eher ...
einer der Sanitäter / eine andere Person
24. In den heißen Sommermonaten sind Rebekka und Ben jede Woche in die neue Eisdielen gegangen. Gestern war wieder besonders viel los. Beide Kellner haben Rebekka angesprochen. Nach dem Bezahlen hat einer Ben fast umgerannt. / Rebekka hat beide Kellner fast umgerannt und nach dem Bezahlen hat Ben einen fast umgerannt. Denn ...
Derjenige, der Ben fast umrennt, ist eher ...
einer der Kellner / eine andere Person
25. Nach dem Umzug mussten sich Ramona und Peter im Bürgeramt ummelden. Leider mussten sie erstmal im Wartezimmer Platz nehmen. Ramona beschwerte sich bei zwei Bauarbeitern und nach einer Stunde Warten beschwerte sich Peter bei einem. / Ramona entschuldigte sich bei zwei Bauarbeitern. Nach einer Stunde Warten beschwerte sich Peter bei einem. Denn ...
Derjenige, bei dem sich Peter beschwert, ist eher ...
einer der Bauarbeiter / eine andere Person
26. Um ihr Englisch aufzubessern haben Janina und Fabian einen Volkshochschulkurs belegt. Heute behandelten sie das Thema Präpositionen. Janina hat zwei Strebern zugehört und in der Pause hat Fabian einem zugehört. / Janina hat zwei Strebern geholfen. In der Pause hat Fabian einem zugehört. Danach ...
Derjenige, dem Fabian zuhört, ist eher ...
einer der zwei Streber / eine andere Person

Experimental Material

27. Während des Wochenendausflugs nach München sind Patricia und Bernd in eine bekannte Bäckerei gegangen. Sie wollten unbedingt die berühmten Brezeln probieren. Patricia hat einige Touristen vorgelassen und beim Verlassen der Bäckerei hat Bernd einen vorgelassen. / Patricia hat einige Touristen fotografiert. Beim Verlassen der Bäckerei hat Bernd einen vorgelassen. Daher ...
Derjenige, den Bernd vorlässt, ist eher ...
einer der Touristen / eine andere Person
28. In der Grillsaison gingen Nina und Hannes zum örtlichen Metzger. Sie wollten Fleisch und Würstchen für die morgige Party kaufen. Nina hat beiden Verkäufern zugezwinkert und nach dem Bezahlen hat Hannes einem zugezwinkert. / Nina hat beiden Verkäufern geantwortet. Nach dem Bezahlen hat Hannes einem zugezwinkert. Allerdings ...
Derjenige, dem Hannes zuzwinkert, ist eher ...
einer der Verkäufer / eine andere Person
29. Nathalie und Thomas waren am Freitag auf der Klima-Demonstration. Gespannt warteten sie auf den Beginn der Kundgebung. Nathalie hat drei Polizisten überholt und als die Demonstration sich in Bewegung setzte, hat Thomas einen überholt. / Nathalie hat drei Polizisten informiert. Als die Demonstration sich in Bewegung setzte, hat Thomas einen überholt. Weil ...
Derjenige, den Thomas überholt, ist eher ...
einer der drei Polizisten / eine andere Person
30. Daniela und Jan waren am Mittwoch bei einem Empfang im Rathaus eingeladen. Sie hatten sich im letzten Jahr wiederholt ehrenamtlich engagiert. Daniela hat drei Geschäftsmänner ausgefragt und nach der Rede des Bürgermeisters hat Jan einen ausgefragt. / Daniela hat drei Geschäftsmänner bewundert. Nach der Rede des Bürgermeisters hat Jan einen ausgefragt. Obwohl ...
Derjenige, den Jan ausfragt, ist eher ...
einer der drei Geschäftsmänner / eine andere Person
31. Am Montag haben Maria und Michael das Naturkundemuseum besucht. Interessiert betrachteten sie das riesige Dinosaurierskelett genauer. Maria hat zwei Lehrern eine Frage gestellt und in der Cafeteria hat Michael einem eine Frage gestellt. / Maria hat zwei Lehrern einen Flyer gegeben. In der Cafeteria hat Michael einem eine Frage gestellt. Tatsächlich ...
Derjenige, dem Michael eine Frage stellt, ist eher ...
einer der Lehrer / eine andere Person
32. Lisa und Max wollten letztes Wochenende ihre Weihnachtseinkäufe erledigen. Auf der Schildergasse drängten sie sich durch die Masse. Lisa hat zwei Straßenmusiker erschreckt und vor einem Schuhgeschäft hat Max einen erschreckt. / Lisa hat zwei Straßenmusiker erkannt. Vor einem Schuhgeschäft hat Max einen erschreckt. Sofort ...
Derjenige, den Max erschreckt, ist eher ...
einer der Straßenmusiker / eine andere Person