

Weak definites

Semantics, lexicon and pragmatics

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Weak definites

Semantics, lexicon and pragmatics

Zwakke definieten

Semantiek, lexicon en pragmatiek

(met een samenvatting in het Nederlands)

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a **la** familia, a **los** amigos
(específicos y genéricos)

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CHAPTER 1

Introduction

1.1 What this dissertation is about¹

A great range of definite phrases (*definites*) must refer to entities that are uniquely identifiable in the context in which they are used. This is by the picture and example in Figure 1.1.



FIGURE 1.1: *Adrian went to **the** restaurant*

¹This introduction does not include references to the literature. They will be provided in abundance in later chapters.

Given this uniqueness condition, definites are normally infelicitous in contexts in which there is more than one entity satisfying their descriptive content, as shown in Figure 1.2.



FIGURE 1.2: #*Adrian went to the restaurant.*

However, as illustrated in Figure 1.3, some uses of definites are perfectly acceptable in non-unique contexts. Due to this peculiar behaviour, they are well known as *weak definites*.



FIGURE 1.3: *Lola went to the supermarket*

The present dissertation is concerned with the meaning of weak definites. There are important reasons why they deserve to be properly understood and accounted for. One reason is that weak definites display a number of lexical, semantic, and syntactic peculiarities which, along with their non-

unique reference, challenge traditional approaches to one of the central topics of the study of natural language meaning, that is, definites. Another reason is that weak definites constitute a cross-linguistic phenomenon tightly related to others which also deserve to be better studied. Both, the properties of weak definites as well as the other related phenomena will be thoroughly discussed in the coming chapters.

1.2 Research questions and approach

Three research questions are aimed to be answered by this dissertation. The first one is how exactly weak definites and the sentences in which they occur are interpreted. The second question is what semantic theory can adequately account for the interpretation of weak definites and the embedding sentences. The third question is how this semantics is responsible for all the properties of weak definites.

In order to answer the research questions, this dissertation pursues three tasks: to better understand the behavior of weak definites, to develop a compositional account about their meaning, and to corroborate the predictions this theory makes. For the first and the last task, various batteries of linguistic tests are applied. Additionally, in cases where linguistics tests are not able to provide clear grammaticality judgments and the result of these tests are particularly relevant to the development of the theory, experimental evidence is also presented.

To develop the theory about the meaning of weak definites, a formal semantics framework is adopted. In this tradition, the meaning contribution most commonly attributed to definites includes the requirement that the referent of these phrases is unique. To maintain this uniqueness requirement but at the same time account for the properties of weak definites, including the apparent lack of reference to unique ordinary individuals, one possible strategy is to analyze weak definites as phrases that rather refer to kinds of ordinary individuals. Thus, for example, the definite *the supermarket*, in Figure 1.3, would refer to the kind of supermarkets rather than to a member of that kind, a supermarket. Pursuing this strategy motivated all the research presented in this dissertation.

1.3 Dissertation outline

Let me now provide a brief outlook on the content of the coming chapters. After overviewing the intuitions behind the two traditional approaches to definites, namely, uniqueness and familiarity, **Chapter 2** characterizes weak definites in detail.

Chapter 3 presents a compositional analysis of weak definites, which accounts for most of the properties of weak definites discussed in the previous chapter. The proposal, in a nutshell, is that weak definites refer to kinds which combine with non-kind-level predicates by means of a lexical rule that lifts these predicates to kind-level predicates. The lifted predicates include in their denotation a relation between kinds and their instantiations. The denotation also includes a relation that associates kinds with their stereotypical usages.

Some of the elements of the present analysis make a number of predictions, which the four chapters after Chapter 3 aim to corroborate, both theoretically and empirically. The first element is the proposal that weak definites refer to kinds. This predicts that only adjectives operating at the level of kinds should be able to occur in weak definite configurations. **Chapter 4** corroborates this by determining the semantics of adjectives that weak definites accept and by presenting two experiments that tested the interpretation of different types of modified and non-modified definites.

The second element of this analysis is the association of kinds with stereotypical usages, which makes two predictions. First, this association predicts that only nouns designating objects that are used in a stereotypical way can occur in weak definites. Second, this association predicts that only verbs supporting stereotypical ways of use can govern weak definites. Both predictions are corroborated in **Chapter 5**, which discusses the lexical semantics of nouns and verbs occurring in weak definite configurations.

The third element of the present analysis is that the association of kinds with stereotypical usages is specified in the logical form of weak definite sentences. This specification predicts that the meaning enrichments that the sentences present (e.g. *Marie went to the supermarket* not only means that Marie went to a supermarket but also that she went to buy some groceries) are at least partly truth-conditional. This is confirmed in **Chapter 6**, where the properties of these enrichments are assessed and compared with those of other types of inferences.

The fourth element of this analysis is another characteristic of the

logical form attributed to weak definite sentences, in a particular, its lack of variables representing individuals instantiating kinds. This absence predicts that weak definites are not able to establish discourse referents. **Chapter 7** provides arguments and experimental results in support of this defectiveness.

Chapter 8 summarizes the main results of this dissertation, suggests some lines of future research, and, finally, acknowledges other approaches to weak definites.

CHAPTER 2

Weak definiteness

Abstract. Weak definites do not seem to refer to uniquely identifiable individuals. In addition, these phrases exhibit other peculiar properties: they allow “sloppy” readings in VP-ellipsis sentences; they take “narrow scope” interpretations in quantified sentences; they are limited to a number of nouns and predicates; they display restrictions on modification and on number marking; they typically occur as objects of episodic sentences; they display enriched meanings; they are not good antecedents of anaphoric expressions; they resemble generic definites; and they are in cross-linguistic complementary distribution with bare singulars.

2.1 Introduction

Regular definites, like the one in (1), have traditionally been analyzed either in terms of uniqueness or familiarity. Weak definites, like the one in (2), represent a challenge for both lines of thought. These phrases can be felicitously used in contexts in which individuals that are unfamiliar or non-uniquely identifiable can satisfy the descriptive content of the phrases. In addition, weak definites present a range of other peculiar properties.

- (1) Oliva walked to the fountain.¹

¹The examples that will be shown throughout this thesis were completely invented,

- (2) Oliva walked to the park.

In the present chapter, I characterize weak definites in detail. The aim is to explain each property the present dissertation addresses to. The chapter is organized as follows. Section 2.2 provides a succinct overview of the intuitions behind the two traditional approaches to definite descriptions. Section 2.3 characterizes weak definites in detail. Section 2.4 summarizes the main claims.

2.2 Brief story of definiteness

Definites have been one of the central topics in the study of natural language meaning, from a linguistic and a philosophical perspective. Given the great diversity of uses of definites, the question of what these phrases contribute to the meaning of sentences has been answered in several ways. Most of the approaches can be grouped in two lines of thought, one involving uniqueness and another one involving familiarity. In the following subsections I discuss briefly the pretheoretical intuitions behind both approaches.²

2.2.1 Uniqueness

The classical analysis of definites, which in essence still prevails within the contemporary literature, is the one proposed by Russell (1905). He proposed that definites are expressions with a semantics involving two ingredients, existence and uniqueness. Accordingly, a sentence like *the king of France is bald* could be paraphrased as ‘there is an entity x such that x is a king and nothing else is a king, and x is bald’. In other words, the requirements that the property expressed by the descriptive content of a definite must hold of only one entity, and that such an entity must exist, are both part of the truth-conditional meaning of definites. Such claim is rather strong as it brings about that the function of a definite is to assert the existence of its referent and the unique applicability of a

or adapted from real examples obtained through Google search, or borrowed from other published works. Only when an example is borrowed, I will acknowledge the source where it comes from.

²For more exhaustive surveys of the different uses of definites and their accounts I refer the reader to Hawkins (1978); Löbner (1985); Lyons (1999); Roberts (2003); Schwarz (2009).

property to that entity. This predicts that a sentence like *the present king of France is bald* should be considered false either in a model in which France does not have a king or where France has more than one king. Intuitively speaking, to treat this sentence as false is not accurate. The sentence in fact does not seem to be able to receive any truth value.

In response to this problem, Strawson (1950) claimed, as Frege (1892) did some decades before, that existence and uniqueness are not really part of the truth-conditional meaning of definites. Instead, Strawson and Frege thought of these conditions as presuppositions triggered by the use of definites. Accordingly, the sentence *the present king of France is bald* does not turn out to be false if there is no present king of France or if there is more than one. Instead, this sentence cannot be assigned a truth value because the information that was supposed to be taken for granted in order for this assignment to happen is not true.

Apart from considering existence and uniqueness not to be part of the asserted but of the presuppositional meaning of sentences containing definites, the Frege-Strawson view also differs from Russell's analysis since it treats definites as referential expressions rather than quantificational. There are several reasons to prefer a referential analysis over a quantificational one for definites in general. In fact, this preference, along with the consideration that uniqueness is a presupposition and not a semantic ingredient, is prevalent in most of the contemporary approaches to definites.

Notice that Russell's analysis only concerns definites containing singular countable nouns. Hawkins (1978) subsumed the notion of uniqueness under *exhaustiveness*, better known as *maximality*, to account for definites with mass and plural nouns, such as *the astronauts* and *the water*, respectively. The idea of maximality is that a definite's denotation consists of everything meeting the conditions of its descriptive content, namely, the maximal set of objects (e.g. astronauts) or the totality of mass (e.g. water).

Even with Frege's view that uniqueness is not asserted but presupposed, the claim that the descriptive content of a definite must hold of one and only one entity is still very strong and thus easy to falsify. Consider, for instance, uses of definites whose descriptive content does not suffice to pick a unique referent in the world:

- (3) a. Please put my laptop on **the table**.
- b. Martina met **the teacher** yesterday.

In these examples, the definites *the table* and *the teacher* refer respectively to a table and a teacher that are unique in a particular universe of discourse rather than in the entire world. This shows that the applicability of the uniqueness requirement is restricted to the domain of interpretation of the sentences just like it happens with the felicity conditions of other expressions in natural language such as quantifiers (Westerstahl, 1985; von Stechow, 1994). I refer the reader to authors like (Chierchia, 1995; Elbourne, 2005; Schwarz, 2009) to see different ways to account for domain restrictions on definites.

2.2.2 Familiarity

A different approach to the meaning of definites is the one proposed by dynamic theories of the meaning of sentences. In these theories, meaning formalization is embedded into discourse analysis. The two main theories of this type are Discourse Representation Theory (DRT) proposed by Kamp (1981), and File Change Semantics (FCS) proposed by Heim (1982). Here I only discuss the basics of the FCS approach to definites. I refer the reader to Heim's publication and to Kamp and Reyle (1993) and Geurts and Beaver (2011) for a complete overview of the main ideas and applications of FCS and DRT, respectively.

FCS proposes that the interpretation of sentences involves a mental file of cards representing discourse referents and containing information about them. This file is constantly enriched as the discourse embedding the sentences proceeds by adding new cards as well as more information about the entities of the old cards. The contents of the cards constitute the *common ground*, which is the information shared by the participants of a conversation. This information can be linguistically given, or presupposed, or the product of the speakers' educational, cultural and sensorial experience.

FCS treats definites and *indefinites* as phrases introducing their descriptive content into the common ground along with a variable. This variable is seen as an index on a file card. Indefinites introduce new entities into the discourse, that is, they create new file cards with new indexes and new descriptions. In contrast, definites refer back to already existing discourse entities, that is, they pick up an already existing file card that contains a congruent description with them so their variable is interpreted with that card's index. In other words, the difference between definites and indefinites is that the former is subject to a *novelty* condition

whereas the latter is subject to a *familiarity* condition.

The familiarity condition, motivated by Christophersen's (1939) work, circumvents the problem that context-dependent definites, like those in (3), represent for the uniqueness approach: this condition implies that a definite's main function is not to convey the uniqueness of its referent at all, but to refer to an entity which has been already introduced into the discourse. Therefore, it is not that the referent of *the table* and *the teacher* is the only individual in the world or in the discourse context per se, but it is the one that the addressee is in the position to identify because it is familiar.

In FCS, the referent of a definite may be familiar for various reasons. The following examples illustrate the possibilities:

- (4) a. A man and a woman enter an exclusive perfumery in Paris.
The man sits down and dozes for three hours while the woman chooses a new perfume.
- b. *Context:* A goat walks into a room where two veterinarians are having a coffee.
Sentence: **The goat** stinks!
- c. **The moon** was very bright today.

In (4a), the referent of the relevant definite is familiar because of a previous mention in the discourse. In (4b), the context in which the sentence is uttered provides non-linguistic saliency to the definite's referent. Finally, in (4c), the sentence implicitly calls on the general knowledge of the discourse interlocutors.

2.2.3 Preliminary summary

There exist two main lines of thought accounting for the meaning of definites. One line, initiated by Frege (1892), Russell (1905), and Strawson (1950), can be summarized in the following requirement:

- (5) *Uniqueness requirement.*
 A definite is felicitous only if there is one and only one entity in the context that satisfies its descriptive content.

The other line of thought, proposed by Heim (1982) and Kamp (1981):

(6) *Familiarity condition*

A definite is felicitous only if the existence of its referent is presumably known by the hearer.

Most of the contemporary approaches to definites opt for either uniqueness (e.g. Hawkins, 1991; Abbott, 1999) or familiarity (e.g. Green, 1996; Chafe, 1996). More recently, some authors have pursued a combination of both approaches (e.g. Farkas, 2002; Roberts, 2003) and some others have adopted both approaches to account for different uses of definites (e.g. Schwarz, 2009). Contributing to evaluate all these alternatives and their applicability to different uses of definites is not one of the aims of this dissertation. Instead, I will just focus on the meaning contribution of the definite article present in weak definites. As I explain in detail in the next chapter (Section 3.3), I assume that the meaning of this definite article is the same one of the definite article occurring in at least a great range of regular definites, and that it encodes uniqueness.

2.2.4 Problems with uniqueness and familiarity

Some uses of definites are counterexamples for both the uniqueness and the familiarity approach. These definites escape uniqueness as their descriptive content can be satisfied by more than one entity in the context. These definites also escape familiarity in the sense that they do not refer to a particular individual present in the common ground.

One type of these “problematic” definites, in particular for the uniqueness approach, is *covarying* interpretations of definites. The sentences in (7) illustrate the phenomenon. In these cases, the value of the definites in bold letters (i.e. *the target* and *the woman*, respectively) is not a specific individual but rather one that varies with respect to a quantified expressions present in the same sentence (i.e. *every soldier* and *every man*, respectively). This covariation typically needs to be supported by context. Covarying definites have been accounted for by a number of authors (see, for instance, Chierchia, 1995; Winter, 2000; Elbourne, 2005; Schwarz, 2009):

- (7) a. At a shooting range, each soldier was assigned a different target and had to shoot at it. At the end of the shooting we discovered that every soldier hit **the target**. (Winter, 2000)

- b. Each man was paired with a different woman for the training exercise. Fortunately, every man liked **the woman**, and things went smoothly. (Elbourne, 2005)

Another type of problematic definites, different from covarying definites (Section 2.3.3 explain in what senses), are examples of so-called *weak definiteness*. Sentences in (8) illustrate the phenomenon. These definites are qualified as weak because they can occur felicitously in contexts in which more than one individual can satisfy their descriptive content. For example, in the most probable context in which a sentence like (8a) would be uttered, John has two arms and the definite is acceptable. Similarly, sentence (8e) could felicitously describe a situation in which Sue brings her nephew to two hospitals instead of one because the first one where she drives to is closed:

- (8) a. John was hit on **the arm**. (Ojeda, 1993)
- b. John got these data from **the student of a linguist**. (Poesio, 1994)
- c. It is safer to mount and dismount towards **the side of the road**, rather than in the middle of traffic. (Barker, 2005)
- d. Switch **the light** on. (Löbner, 1985)
- e. Sue took her nephew to **the hospital**. (Carlson and Sussman, 2005)
- f. Take **the elevator** to the 4th floor. (Birner and Ward, 1994)

In the examples above, we can identify two types of weak definites. One type, specifically illustrated in (8a)-(8c), comprises definites that designate individuals involved in a possession relationship with another individual. Sometimes this other individual, namely, the possessor, is also expressed by means of a complementing prepositional phrase headed by *of*. Possessive weak definites have been studied by a number of authors (see Vergnaud and Zubizarreta, 1992; Ojeda, 1993; Poesio, 1994; Barker, 2005; Levinson, 2006; Rawlins, 2006; Le Bruyn, 2014; Doron and Meir, 2014).

Another type of weak definiteness is the one illustrated in examples (8d)-(8f). These definites are the object of study of the present dissertation. Therefore, their characteristics will be discussed in detail over the coming sections. For brevity, and because I will no longer discuss possessive weak

definites in this dissertation, from now on I will refer to the weak definites of my interest simply as *weak definites*, as opposed to specific, *regular definites*.

2.3 Weak definites

This dissertation focuses on the class of weak definites that the following examples illustrate more extensively:

- (9) a. Elena took her daughter to **the zoo**.
- b. Please take **the elevator** to the second floor.
- c. How can I listen to **the radio** from my Blackberry Curve 8520 for free?
- d. SHhhhhhhhh! I'm on **the phone**!
- e. Would you mind if I open **the window**?
- f. When do babies go to **the dentist** for their first visit?

As from Carlson and Sussman's (2005) seminal work, these constructions have received significant attention (e.g. Carlson et al., 2006; Aguilar-Guevara, 2008; Klein et al., 2009; Aguilar-Guevara and Zwarts, 2011; Bosch, 2010; Bosch and Cieschinger, 2010; Scholten and Aguilar-Guevara, 2010; Aguilar-Guevara and Schulpen, 2011; Klein, 2011; Schulpen, 2011; Vogel, 2011; Aguilar-Guevara and Zwarts, 2014; Beyssade, 2014; Carlson et al., 2014; Cooley, 2013; Corblin, 2014; Donazzan, 2014; Klein et al., 2013; Pires de Oliveira, 2013; Zribi-Hertz and Jean-Louis, 2013; Aguilar-Guevara and Schulpen, 2014; Schwarz, 2014; Zwarts, 2014). There are several reasons why weak definites constitute an intriguing puzzle. First, they present a number of lexical, semantic, and syntactic peculiarities which, together with their non-unique reference, challenge the traditional approaches to definites. Second, they occur in a great number of languages (e.g. several Romance and Germanic languages, Hungarian, and Greek). Third, they are in cross-linguistic complementary distribution with some other nominal expressions, namely, bare singular nominals.

In the following subsections I will discuss each of the characteristic properties of weak definites in detail. I would like to remark that most of them were identified by Carlson and Sussman (2005).

2.3.1 Non-unique reference

As mentioned before, weak definites do not seem to refer to uniquely identifiable ordinary individuals. Consequently, they can felicitously be uttered in contexts in which more than one entity satisfies their descriptive content:

- (10) *Context.* Lola is sitting on the sofa of a waiting room reading a newspaper, and there are some more newspapers lying next to her.
Sentence. Lola is reading **the newspaper**.
- (11) *Context.* Sabina is standing in front of three elevators waiting for any of them to come.
Sentence. Sabina is waiting for **the elevator**.

Contexts in which non-unique individuals are present can be really minimal, as the following examples show:

- (12) *Context.* Lola traveled by train from Amsterdam to Nijmegen, but she actually made a transfer in Arnhem.
Sentence. Lola took **the train** from Amsterdam to Nijmegen.
- (13) *Context.* Sabina is standing in front of several mirrors contemplating herself.
Sentence. Sabina is looking in **the mirror**.

Non-unique reference of weak definites will be accounted for in Chapter 3.

2.3.2 “Sloppy” identity in elliptical contexts

The difference between regular and weak definites regarding (non-)unique reference is reflected in sentences containing elided verb phrases (*VP-ellipsis*). For example, in the sentences in (14), which contain regular definites in the overt VP, *the restaurant* and *the secretary*, the elided verb phrase is referentially linked to the overt one so that the elided definites must refer to the same entity that the overt definites refer to. In other words, the restaurant and the secretary in question must be the same one for the two events that each sentence describes.

- (14) a. Lola went to **the restaurant** and Alice did too.
 (Lola and Alice must have gone to the same restaurant)

- b. Mateo called **the secretary** and Sabina did too.
(Mateo and Sabina must have called the same secretary)

In contrast, in the weak definite sentences in (15), the definites can receive a “sloppy” interpretation, that is, the definite of each verb phrase can have a different value. Somehow, it is as if the identity of the individuals in the events these sentences describe does not matter much (and thus they can have a sloppy identity) as long as the individuals satisfy the descriptive content of the definites:

- (15) a. Lola went to **the hospital** and Alice did too.
(Lola and Alice could have gone to different hospitals)
- b. Mateo called **the doctor** and Sabina did too.
(Mateo and Sabina could have called different doctors)

Following Carlson and Sussman (2005), who confirmed experimentally the strength of the contrast illustrated above, I adopt VP-ellipsis sentences as the standard diagnose to identify weak definites and distinguish them from regular definites. Accordingly, throughout this dissertation I will use VP-ellipsis sentences to show the presence/lack of weak readings. When relevant, I will put the symbol # next to the definite article of the definite in question as an indication that it does not have a weak reading:

- (16) Sonia read #the book and Alice did too.

Sloppy readings of weak definites will be accounted for in Chapter 3 and addressed again in Chapter 4 in connection with the modification restrictions that affect these definites.

2.3.3 “Narrow scope” interpretation

Another context where lack of uniqueness of weak definites is visible are sentences in which these definites interact with quantified expressions. As the sentences in (17) illustrate, regular definites in these contexts always display “wide” scope interpretations, in the sense that their value does not vary based on the value of the present quantifiers. In contrast, as (18) illustrates, weak definites allow covarying interpretations:

- (17) a. Every boxer was sent to #**the clinic**.
b. Victor takes #**the boat** every day.
(Every day Victor takes the same boat)

- (18) a. Every boxer was sent to **the hospital**.
 (Each boxer could have been sent to a different hospital)
 b. Victor takes **the bus** every day.
 (Every day Victor might take a different bus)

It is worth remarking that covarying interpretations of weak definites in quantified contexts differ from the type of covariation that definites illustrated in (7) (repeated in (19)) exhibit in at least two important aspects. One difference is that, in the case of weak definites, the one-to-one correspondence between individuals satisfying the descriptive content of the definite and the quantified expression is optional. For example, the sentence in (18a) can felicitously describe a situation in which two of three boxers were sent to the same hospital and the third boxer to another. In contrast, the sentence in (19a) would not be a good summary of a situation in which two soldiers hit the same target although the rest hit different ones. A second difference between “true” covarying definites and weak definites interacting with quantifiers is that, as (19) illustrates, the former, unlike the latter, need to be enunciated in a correspondence context allowing the covariation interpretation. That is why, *Every soldier hit the target*, in contrast with *Victor takes the bus every day*, can only trigger the specific reading of the definite if it is said out of the blue.³

- (19) a. At a shooting range, each soldier was assigned a different target and had to shoot at it. At the end of the shooting we discovered that every soldier hit **the target**. (Winter, 2000)
 b. Each man was paired with a different woman for the training exercise. Fortunately, every man liked **the woman**, and things went smoothly. (Elbourne, 2005)

The “narrow scope” interpretation of weak definites will be accounted for in Chapter 3.

2.3.4 Lexical restrictions

The set of nouns that can occur in weak definites is reduced to a few classes plus some isolated cases, which are illustrated below:

³Despite these two notable differences between covarying and weak definites, plus some others provided by Schwarz (2014), a number of authors have suggested analyzing weak definites as covariation cases. In Chapter 8, I will more appropriately acknowledge this and other alternative approaches to weak definites.

- (20) *Communication devices*
Martha listened to **the radio** and Alice did too.
- (21) *Means of transport*
Martha took **the bus** and Alice did too.
- (22) *Natural places*
Martha went to **the beach** and Alice did too.
- (23) *Establishments*
Martha is in **the hospital** and Alice is too.
- (24) *Home spaces*
Martha spent two hours in **the kitchen** and Alice did too.
- (25) *Professions*
Martha called **the doctor** and Alice did too.

Interestingly, not every noun designating an object of the classes listed above can occur in a weak definite configuration. Even nouns with potentially the same reference differ in their capacity to trigger weak readings:

- (26) *Communication devices*
Martha listened to #**the walkie-talkie** and Alice did too.
- (27) *Means of transport*
Martha took #**the coach** and Alice did too.
- (28) *Natural places*
Martha went to #**the lake** and Alice did too.
- (29) *Establishments*
Martha is in #**the hotel** and Alice is too.
- (30) *Home spaces*
Martha spent two hours in #**the corridor** and Alice did too.
- (31) *Professions*
Martha called #**the physician** and Alice did too.

On the other hand, weak definites are also restricted with respect to their governors. Weak definites can only be objects of certain verbs and verb-preposition combination, which vary from case to case:

- (32) a. Martha **listened** to the radio and Alice did too.
b. Martha **fixed** #the radio and Alice did too.

- (33) a. Saulina **checked** the calendar and Alice did too.
b. Saulina **read** #the calendar and Alice did too.
- (34) a. Saulina **is in** the hospital and Alice is too.
b. Saulina **is behind** #the hospital and Alice is too.
- (35) a. Saulina **called** the doctor and Alice did too.
b. Saulina **insulted** #the doctor and Alice did too.

Lexical restrictions will be accounted for in Chapter 3 and addressed again in Chapter 5 in connection with the role of stereotypicality in the interpretation of weak definites.

2.3.5 Restrictions on modification

Weak readings typically disappear when the nouns heading the definites are modified:

- (36) Lola went to #**the old hospital** and Alice did too.
- (37) Sabina called #**the small elevator** and Mateo did too.

Only few adjectives, which presumably establish subclasses of objects, are acceptable:

- (38) Lola went to **the psychiatric hospital** and Alice did too.
- (39) Sabina called **the cargo elevator** and Mateo did too.

Modification restrictions are addressed in Chapters 3 and again in Chapter 4, where they constitute the central topic.

2.3.6 Number restrictions

Most weak definites are singular, as the examples of previous sections show. However, there are a few plural examples:

- (40) a. Alice went to **the mountains**.
b. Alice watered **the plants**.

Interestingly, in both singular and plural cases the number morphology cannot be altered without losing the weak reading:

- (41) a. Lola checked **the calendar** and Alice did too.

- b. Lola checked **#the calendars** and Alice did too.
- (42)
- a. Lola went to **the mountains** and Alice did too.
 - b. Lola went to **#the mountain** and Alice did too.

Number restrictions of weak definites are addressed in Chapter 3 and again in Chapter 5.

2.3.7 Meaning enrichment

Sentences containing weak definites typically carry more information than what is conveyed by the straightforward composition of their constituents. In other words, the sentences typically convey a *literal meaning* (LM) and an *enriched meaning* (EM), which are illustrated as follows:

- (43) Lola went to the hospital.
 LM = Lola went to a hospital.
 EM = Lola went to get some medical services.
- (44) Lola went to the store.
 LM = Lola went to a store.
 EM = Lola went to do some shopping.

The presence of EMs is one of the characteristics of weak definites that strongly motivates the analysis defended in this dissertation. They will be accounted for in Chapter 3. They will be addressed again in Chapter 5 when I discuss the role of stereotypicality in the interpretation of weak definites. Finally, they will be discussed in more detail in Chapter 6, as their semantic-pragmatic status constitutes the central topic of that chapter.

2.3.8 Non-familiar reference

Weak definites, in contrast to regular definites (according to the familiarity approach), do not need to refer to individuals already present in the common ground. Consequently, they can occur in contexts where no mention to a possible referent has been made. Consider the following sentences:

- (45) a. Laila bought a new book and a magazine. **#**After pondering for a while what to read first, she decided to read **the letter**.

- b. Laila bought a new book and a magazine. After pondering for a while what to read first, she decided to read **the newspaper**.

In the discourse in (45a), the final main sentence is infelicitous because the regular definite *the letter* has not been previously introduced in the discourse. In contrast, the use of the weak definite *the newspaper* in an analogous context (45b) does not cause any problem.

Non-familiar reference of weak definites will be discussed in Chapter 3.

2.3.9 Discourse referential restrictions

We just saw that weak definites seem not to refer to unique individuals. In this particular sense, they resemble indefinites, which are claimed to be neutral with respect to uniqueness (Lyons, 1999; Farkas, 2002). Accordingly, sentences (46a) and (46b) are truth-conditionally equivalent:

- (46) a. Lola is reading **the newspaper**.
- b. Lola is reading **a newspaper**.

Crucially, although having the same truth-conditional meaning, one can judge that these sentences cannot be used for the same communicative purpose. One can judge that sentence (46b) is a better choice than (46a) to introduce a referent (a newspaper) into the conversational space.

In general, weak definites are not a good way to refer to individuals if we want to keep talking about them. The discourse-referential defectiveness of weak definites as opposed to indefinites is observable more clearly in sentences like (47), where the definites do not serve as good antecedents of anaphoric expressions:

- (47) a. Lola listened to **the radio**_{*i*} until she fell asleep. ? She turned **it**_{*i*} off when she woke up in the middle of the night.
- b. Alice played a solo on **the saxophone**_{*i*}. ? She did not realize **it**_{*i*} was out of tune.

Although we cannot say that these sentences are ungrammatical, clearly they are less acceptable than analogous sentences having an indefinite instead of a weak definite:

- (48) a. Lola listened to **a radio**_{*i*} until she fell asleep. She turned **it**_{*i*} off when she woke up in the middle of the night.

- b. Alice played a solo on **a saxophone_i**. She did not realize **it_i** was out of tune.

The discourse referential properties of weak definites are discussed in Chapter 3 and then in Chapter 7, where they constitute the central topic.

2.3.10 Occurrence in object position

Weak definites typically occur as objects of verbs and verb-preposition combinations in episodic sentences:

- (49) a. Corina read **the newspaper** this morning.
- b. Bert listened to **the radio** while he was having breakfast.

When the same definites occur as subjects, normally they can only be interpreted specifically:

- (50) a. #**The newspaper** disappeared this morning.
- b. #**The radio** didn't work this morning.

Only in a few cases the definites occurring in subject position seem to be able to trigger weak readings:

- (51) a. **The bus** arrived late the whole week.
- b. **The mailman** didn't bring anything today.

The asymmetry between object and subject position and weak definites will be addressed in Chapter 3.

2.3.11 Resemblance with generic definites

Examples (50) have shown that weak definites cannot be normally interpreted as such in subject position of episodic sentences. Interestingly, most of these definites can occur as subjects of generic sentences and receive interpretations close to weak definite interpretations in the sense that they do not refer to unique ordinary individuals. The following examples illustrate these for the definites *the violin* and *the newspaper* combined with different types of predicates according to Carlson's (1977) classification. Examples (52a)-(53a) contain predicates of *kinds* of individuals; (52b)-(53b) contain predicates of individuals; and (52c)-(53c) contain predicates of *stages* of individuals:

- (52) a. **The violin** in its present form emerged in early 16th-Century Northern Italy.
 b. **The violin** has no frets to stop the strings.
 c. If you want to play the lyric part of a song, **the violin** always gets the melody.
- (53) a. **The newspaper** is a wonderful source of information and entertainment.⁴
 b. **The newspaper** always has coupons, but especially on Sundays.
 c. **The newspaper** always comes in a plastic bag when it rains.

Let me remark that I consider the generic definites illustrated above to be different in meaning and distribution from plural generic definites in languages like Spanish. These other definites are typically used in those contexts in which English bare plurals are used (e.g. *Los holandeses son buenos marineros* ‘Dutchmen are good sailors’). To learn more about plural generic definites, I refer the reader to works like Farkas and de Swart (2007); Farkas and Swart (2009) and references therein.

Having said this, I also need to acknowledge that the generic definites I focus on this dissertation, the only ones I call generic definites from now on, are typically singular but there exist few plural cases. These cases differ from bare plurals (and plural generic definites in languages like Spanish) in that they seem to refer to a collection of items and not just to more than one individual, as the following examples show:

- (54) **The mountains** are the perfect place to get away from the hustle and bustle of the city.

Apart from non-unique reference, three more facts make the resemblance between weak and generic definites more evident. The first one is that -just like weak definites lose their weak reading when their number morphology is changed- generic definites, singular (55) or plural (56), become less acceptable:

- (55) a. Nowadays, **the elevator** has become an indispensable tool for transportation in our society.

⁴Admittedly, it is not “well-established” to consider a predicate like a *source of information* as kind-level.

- b. ? Nowadays, **the elevators** have become an indispensable tool for transportation in our society.
- (56) a. **The mountains** are the perfect place to get away from the hustle and bustle of the city.
- b. ? **The mountain** is the perfect place to get away from the hustle and bustle of the city.

The second fact is that generic definites do not accept modification (57) unless they are modified by adjectives that create subclasses of objects (58):

- (57) a. ? **The old hospital** is a place where you can get medical treatment.
- b. ? **The new prison** is a place for punishing criminals.
- (58) a. **The public hospital** is a place where you can get medical treatment.
- b. **The military prison** is a place for punishing criminals.

The third fact is that generic definites, just like weak definites and in contrast to regular definites according to the familiarity approach, do not need to refer to individuals already present in the common ground. Consequently, they can also occur in out-of-the-blue contexts, as sentences (52) and (53) also show.

The relation between weak and generic definites will be accounted for in Chapter 3.

2.3.12 Weak definites and bare singulars

Weak definites occur in different Indo-European languages besides English, such as Spanish, Portuguese, Catalan, French, Dutch, German, and Greek.

Interestingly, in some of these languages, including English, there is a type of nominal expression which is functionally analogous to weak definites, namely, bare singular nominals (*bare singulars*) of the type illustrated as follows:

- (59) a. The ship is at **sea/port**.
- b. He's in **bed/jail/prison/church**.
- c. I watched **television** this weekend.

These bare singulars are in cross-linguistic complementary distribution with weak definites. This means that what is expressed by means of a weak definite in a dialect or language it is expressed by means of a bare singular in another one:

- (60) a. Laura fue al hospital. (Spanish)
 ‘Laura went to-the hospital’
 b. Laura went to the hospital. (American English)
 c. Laura went to hospital. (British English)
- (61) a. Berit tocó el piano toda la noche. (Spanish)
 ‘Berit played the piano all night’
 b. Berit speelde de hele nacht piano. (Dutch)
 c. Berit spielte die ganze Nacht Klavier. (German)

In addition to their functional similarity with weak definites, bare singulars have most of the properties of weak definites. They display sloppy identity in VP-ellipsis sentences (62) and ‘narrow scope’ interpretations in quantified sentences (63). Also, not every noun can occur bare (64), and not every predicate can govern a bare singular (65). Likewise, modification turns bare singulars ungrammatical (66). Bare singulars in subject position of episodic sentences are typically not acceptable (67). As subjects of generic sentences, they are also restricted but some of them possible (68). Bare singulars are not good antecedents for anaphoric expressions (69). Finally, sentences with bare singulars present meaning enrichments (70).

- (62) Alice is in jail and Lola too.
 (Alice and Lola could be in different jails)
- (63) Every boxer is in jail.
 (Each boxer could be in a different jail)
- (64) *Alice is in cage.
- (65) *Alice is behind prison.
- (66) *Alice is in old prison.
- (67) * Jail was full last year.
- (68) Jail is not a nice place to be for a young woman.
- (69) # Alice is in jail_i but she thinks that it_i will be demolished soon.

(70) Alice is in jail = Alice is in a jail + to serve a sentence.

This type of bare singulars and their alternation with weak definites have been addressed by authors like Stvan (1998, 2007, 2009); Scholten and Aguilar-Guevara (2010); Lucas (2011); Claessen (2011); Le Bruyn et al. (2011); de Swart (2013); Zwarts (2014). I also discuss them in Chapter 6, Chapter 8.

2.4 Conclusion

In this chapter I characterized weak definites in detail. First, in Section 2.2, I provided an overview of the intuitions behind the two traditional approaches to definites, namely, uniqueness and familiarity. Then, in Section 2.3, I characterized weak definites in detail. These definites represent a challenge for both uniqueness and familiarity because they can be felicitously used in contexts in which individuals satisfying the descriptive content of the definites are neither uniquely identifiable (2.3.1) nor familiar (2.3.8). In addition, weak definites present a series of other special properties: sloppy identity in VP-ellipsis sentences (2.3.2); ‘narrow scope’ interpretations when they interact with quantified expressions (2.3.3); lexical restrictions so that not every noun can occur in a weak definite configuration and not every verb or verb-preposition combination can govern a weak definite (2.3.4); weak definites only accept few adjectives, which establish subtypes of objects (2.3.5); the number morphology of weak definites, singular or plural, cannot be altered without losing the weak reading (2.3.6); weak definite sentences exhibit enriched meanings (2.3.7); weak definites are not good antecedents of anaphoric expressions (2.3.9); weak definites typically occur in object position of episodic sentences and only in some cases can occur in subject position (2.3.10); there are several resemblances between weak and generic definites (2.3.11); finally, weak definites occur in cross-linguistic complementary distribution with some bare singulars (2.3.12).

In the following chapter, I present a compositional theory of weak definites which aims to account for most of the properties discussed in this chapter. This theory is based on the uniqueness approach and it makes use of a number of mechanisms independently motivated by the formal semantics literature.

CHAPTER 3

Weak definites and reference to kinds

Abstract. This chapter presents an analysis of weak definites which aims to account for most of their peculiar properties. The proposal is that these definites refer to kinds, which are instantiated by ordinary individuals when they combine with object-level predicates. This combination is made possible by a lexical rule, which lifts object-level predicates to kind-level predicates, and incorporates into their denotation a relation that represents the stereotypical usages of the kinds.¹

3.1 Introduction

I have shown in the previous chapter that weak definites display the following special properties:

(71) *Non-unique reference*

Context. Lola traveled by train from Amsterdam to Nijmegen, but she actually made a transfer halfway.

Sentence. Lola took the train from Amsterdam to Nijmegen.

¹This chapter is based on two papers written in collaboration with Joost Zwarts, namely, Aguilar-Guevara and Zwarts (2011) and Aguilar-Guevara and Zwarts (2014). The latter is an elaborated version of the former.

- (72) *“Sloppy identity” in VP-ellipsis sentences*
 Lola went to the hospital and Alice did too.
 (Lola and Alice could have gone to different hospitals)
- (73) *“Narrow scope” interpretations*
 Every boxer was sent to the hospital.
 (Each boxer could have sent to a different hospital)
- (74) *Restricted range of nouns*
 a. Martha listened to the radio.
 b. Martha listened to #the walkie-talkie.²
- (75) *Restricted range of predicates*
 a. Martha listened to the radio.
 b. Martha fixed #the radio.
- (76) *Restricted number morphology*
 a. Lola checked the calendar. vs. Lola checked #the calendars.
 b. Lola went to the mountains. vs. Lola went to #the mountain.
- (77) *Restricted modification*
 a. Lola went to #the old hospital.
 b. Lola went to the psychiatric hospital.
- (78) *Meaning enrichment*
 Eva called the doctor = Eva called a doctor + to ask for medical assistance.
- (79) *Discourse referential defectiveness*
 Lola listened to the radio_i until she fell asleep. ? She turned it_i off when she woke up in the middle of the night.
- (80) *Typical occurrence in object position and limited capacity to occur as subjects*
 a. I read the newspaper today.
 b. #The newspaper got wet today.

²Recall that the symbol # indicates that a weak reading is not possible for the definite in question. From now on the reader is invited to verify that by himself with the VP-ellipsis test.

- (81) *Resemblance with generic definites*
 - a. The newspaper is an excellent source of information and entertainment.
 - b. Usually the newspaper has coupons, especially on Sundays.
 - c. The newspaper always comes in a plastic bag when it rains.
- (82) *Cross-linguistic complementary distribution with bare singulars*
 - a. Lola está en la cárcel. (Spanish)
 - b. Lola is in jail. (English)

In the present chapter, I present a compositional analysis of weak definites that aims to account for all these special properties. The proposal in a nutshell is that weak definites refer to kinds instantiated by objects when they combine with object-level predicates. The combination is made possible by a lexical rule that lifts object-level predicates to kind-level predicates, and incorporates into the denotation of the lifted versions two relations, one that instantiates the kinds, and another one that represents stereotypical usages associated with the kinds.

The chapter is organized as follows. Section 3.2 outlines the framework and the notational conventions assumed in this analysis. Section 3.3 presents the semantics I adopt for the definite article present in weak definites. Section 3.4 discusses reference to kinds and how weak definites accomplish that. Section 3.5 discusses how the kinds denoted by weak definites are instantiated. Section 3.6 proposes a logical form for sentences with weak definites. Section 3.7 discusses stereotypical usages of kinds and how they are captured in the logical form of weak definite sentences. Section 3.8 discusses how the combination of weak definites with object-level predicates takes place. Section 3.9 discusses the virtues of this analysis as well as its disadvantages and some other open questions. Section 3.10 summarizes the main claims.

3.2 Theoretical assumptions

In this section I make explicit some basic theoretical assumptions and notational conventions which are part of the framework I adopt in this thesis. The framework is formal semantics as developed by Gamut (1991a,b), Heim and Kratzer (1998), de Swart (1998), and Chierchia and McConnell-Ginet (2000). This overview does not aim to be exhaustive but just

sufficient to ground my analysis properly. When necessary, more assumptions and conventions will be incorporated throughout this thesis. For convenience, I first provide all the assumptions and then an example showing their application.

I adopt a semantic system of interpretation of phrases with the following characteristics. First, this semantics is truth-conditional as it assumes that the meaning of a sentence corresponds to the set of conditions under which a sentence is true. Accordingly, the meaning of the phrases constituting a sentence is defined on the basis of their contribution to the truth conditions of the sentence. Second, the adopted semantics follows the principle of compositionality, which states that the meaning of a complex expression is determined by the combination of the meanings of its constituents. This semantic composition is enabled by some rules, such as *Function Application* and *Predicate Modification*, which I introduce later on. Third, this semantics is formal in the sense that it uses type theory, propositional logic, and lambda notation to represent the meaning of phrases. Finally, let me acknowledge that I adopt a version of this semantics which is merely extensional. One reason for this is that I do not deal with modality, which is usually treated in terms of possible worlds and intensions. Another reason is that intensionality does not play any relevant role in my account of weak definites.

The interpretation of phrases consists of mapping them to semantic expressions or *denotations* by means of the interpretation function represented with the square brackets [...].³ These denotations are assigned a semantic category or *type*. There are three basic types, namely, the type of entities (e), the type of truth values (t) and the type of events (v), and an infinite set of complex types. Expressions with complex types (e.g. type $\langle e, t \rangle$ and type $\langle \langle e, t \rangle, t \rangle$) denote functions that map expressions of basic or complex types to expressions of basic or complex types; for example, type $\langle e, t \rangle$ maps an entity to a truth value, and type $\langle \langle e, t \rangle, t \rangle$ maps a function mapping an entity to a truth value to a truth value. I omit the explicit associations of the expressions with their types when that information is clear from the context, otherwise I add subindexes to the expressions (e.g. $x_{\langle e \rangle}$ and $P_{\langle \langle e, t \rangle \rangle}$). The denotation of phrases includes variables and constants. Variables are letters written in lower-

³The brackets are typically accompanied by some superscripts (i.e. [...] ^{M, c, g}), which represent the model and contextual parameters with respect to which the phrases are interpreted. g is the assignment function for variables. However, in this thesis I omit reference to these parameters for the sake of simplicity.

case italics (e.g. *x*) and constants are full words also written in italics (e.g. *lola*). Basic-type expressions are written in lowercase letters (*y*) and complex-type expressions are written with initial capitalization (e.g. *Sing*). I use the variables *x, y, z* to represent entities, the variables *P, Q, R* to represent expressions of type $\langle e, t \rangle$, or *properties*, and the variables *e, e', e''* to represent events.

Basic categories such as nouns, verbs and determiners are mapped to a denotation by virtue of lexical stipulation; that is to say, they are assigned with a denotation which is assumed to be their lexical meaning. For example, the lexical entry of the noun *balloon* is represented in (83). This denotation corresponds to a function from individuals to truth values, such that, for any individual *x*, *Balloon*(*x*) is true if and only if the individual *x* has the property of being a balloon.⁴

$$(83) \quad [[\textit{balloon}]] = \lambda x[\textit{Balloon}(x)]$$

Non-basic categories such as noun phrases (NPs), determiner phrases (DPs), verb phrases (VPs) and, of course, sentences, or tense phrases (TPs) to be more precise, are attributed with a meaning derived from their constituting members by virtue of some composition rules. Two relevant rules are *Functional Application* and *Predicate Modification*, which Heim and Kratzer (1998) define as follows:

(84) Function Application (FA):

If α is a branching node, β and γ are its daughters, and $[[\beta]]$ is a function whose domain contains $[[\gamma]]$, then $[[\alpha]] = [[\beta]] ([[\gamma]])$.

(85) Predicate Modification (PM):

If α is a branching node, β and γ are its daughters, and $[[\beta]]$ and $[[\gamma]]$ are both functions of type $\langle e, t \rangle$, then $[[\alpha]] = \lambda x. \beta(x) \wedge \gamma(x)$.

In 3.2.2, I will show the application of these rules to compute the meaning of a sentence.

3.2.1 Neo-Davidsonian event semantics

In addition to the general assumptions underlying the formal semantics I adopt here, let me now provide a number of others that are specific to *event semantics* as outlined in Parsons (1990) and Kratzer (1996),

⁴The denotation of common nouns will be extended in the coming chapters.

based on Davidson (1967). These assumptions specifically regard the type of lexical entries attributed to verbs and the style of the logical forms attributed to sentences.

The point of departure is the assumption that a verb (among other types of phrases) includes an event argument in its denotation besides the usual entity argument. At the same time, its corresponding syntactic arguments, namely, the *external argument* and the *internal argument*, which encode the *thematic roles* participating in the action that the verb expresses -i.e. *theme* (Th), *agent* (Ag), *location* (Loc), *goal* (Goal), *experiencer* (Exp), etc.-, are represented as independent predicates with an entity argument and event argument. Example (86) illustrates this with the predicate corresponding to the theme:

$$(86) \quad \lambda x \lambda e [Th(e) = x]$$

Internal arguments, which usually are themes, locations or goals, are introduced as part of the lexical entries of the verbs. In contrast, external arguments, commonly corresponding to agents, are introduced independently by the head of another syntactic projection, namely, *VoiceP*. This projection, specifies in which voice verbs are inflected (Kratzer, 1996). Together with these assumptions, I must make another one, namely, the applicability of an extra composition rule, *Event Identification*, which was proposed by Kratzer (1996) to merge the meaning contribution of the external argument with the meaning of the VP. The rule is presented in (87). There α corresponds to *Voice'* (the intermediate X-bar category of *VoiceP*, with the external argument already merged); β corresponds to the head of *VoiceP* when the voice is active; and γ corresponds to the VP (before the external argument is merged):

(87) Event Identification (EI):

If α is a constituent consisting of daughters β and γ such that $[[\beta]]$ is of type $\langle e, \langle v, t \rangle \rangle$ and $[[\gamma]]$ is of type $\langle v, t \rangle$ then $[[\alpha]]$ is of type $\langle e, \langle v, t \rangle \rangle$, and $[[\alpha]] = \lambda x \lambda e [\beta(e) = x \wedge \gamma(e)]$.

In event semantics, the logical form of a complete sentence represents a set of events. The event variables corresponding to these events are either existentially quantified when the sentences are episodic or bound by other sources of quantification if the sentences are not episodic. The existential quantifier is introduced by the aspect system whereas the other sources of quantification are introduced by modals among other expressions.

Besides the introduction of existential quantification over events, tense and aspect are not particularly relevant to the theory I develop here. Therefore, I do not make explicit any other assumption regarding them and I systematically omit reference to both in the logical form of all the sentences except for the one discussed in the following subsection. For this case, I simply adopt the following meaning of past tense (seen as a sort of pronoun according to Partee (1973)) and the (extensional version of the) meaning of perfective aspect, both proposed by Kratzer (1998):

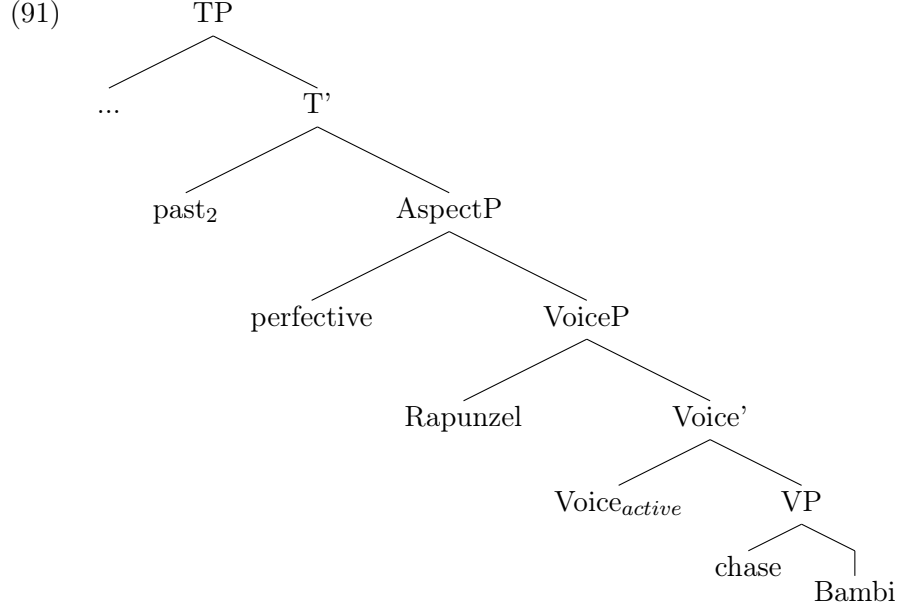
- (88) $[[past_n]]^g$ is only defined if $g(n)$ is a time interval preceding t_0 , the utterance time. If defined, $[[past_n]]^g = g(n)$.
- (89) $[[perfective]]^g = \lambda P \lambda t \exists e [f_{time}(e) \subseteq t \wedge P(e)]$
 (f_{time} is a function that maps an event into its running time)

In the coming section, I will show in what stage of the process of interpretation of a sentence tense and aspect are incorporated.

3.2.2 Rapunzel chased Bambi

To exemplify the application of all the assumptions and conventions adopted above, I compute the meaning of the sentence in (90). Following general principles of generative syntax, I assume that the tree in (91) represents the syntactic composition of this sentence:

(90) Rapunzel chased Bambi



Given this tree, the meaning of the sentence is computed as follows:

- (92)
- a. $[[Bambi]] = bambi$
 - b. $[[chase]] = \lambda x \lambda e [Chase(e) \wedge Th(e) = x]$
 - c. $[[VP]] = [[chase]]([[Bambi]])$ by FA
 $= \lambda e [Chase(e) \wedge Th(e) = bambi]$
 - d. $[[Voice_{active}]] = \lambda x \lambda e [Ag(e) = x]$
 - e. $[[Voice']] = [[Voice_{active}]]([[VP]])$ by EI
 $= \lambda x \lambda e [Ag(e) = x \wedge Chase(e) \wedge Th(e) = bambi]$
 - f. $[[Rapunzel]] = rapunzel$
 - g. $[[VoiceP]] = [[Voice']]([[Rapunzel]])$ by FA
 $= \lambda e [Ag(e) = rapunzel \wedge Chase(e) \wedge Th(e) = bambi]$
 - h. $[[perfective]] = \lambda P \lambda t \exists e [f_{time}(e) \subseteq t \wedge P(e)]$
 - i. $[[AspectP]] = [[perfective]]([[VoiceP]])$ by FA
 $= \lambda t \exists e [f_{time}(e) \subseteq t \wedge Ag(e) = rapunzel$
 $\wedge Chase(e) \wedge Th(e) = bambi]$
 - j. $[[past_2]]^g = g(2)$

$$\begin{aligned}
\text{k. } [[T']] &= [[\textit{AspectP}]]([[\textit{past}]]) && \text{by FA} \\
&= \exists e[f_{\textit{time}}(e) \subseteq g(2) \wedge \textit{Chase}(e) \wedge \textit{Ag}(e) = \textit{rapunzel} \\
&\quad \wedge \textit{Th}(e) = \textit{bambi}]
\end{aligned}$$

According to the previous computation, the sentence in (90) asserts the existence of a past event of chasing in which the agent is Rapunzel and the theme is Bambi.

3.3 The meaning of the definite article

In this section I define the meaning of the definite article present in weak definites. In the previous chapter I have discussed how the definite article has been analyzed in terms of either uniqueness or familiarity. I have also mentioned that the different accounts in the market either assume one or the other perspective, or combine them, or adopt both under the assumption that there are at least two definite articles in natural language, one of them expressing familiarity and the other one uniqueness. Contributing to the evaluation of these approaches is not one of the aims of this dissertation. Instead, I simply assume that the definite article present in weak definites is the same one occurring in at least a great range of regular definites, and that it encodes uniqueness.⁵

In addition to the usual motivations that are provided in favor of the uniqueness approach, I have another one related to the way weak definites are expressed in some dialects of German. In these dialects, when a preposition precedes a definite article (e.g. *zu dem Haus* ‘to the house’), the definite article can contract for several reasons (e.g. *zum Haus* ‘to the house’) (Cieschinger, 2006; Puig-Waldmüller, 2008; Schwarz, 2009). One of these reasons is the expression of weak definiteness. Schwarz has noticed that if the definite article is not contracted in these contexts, then the weak reading of the definite is not available:

- (93) Maria ging zum/zu #dem Supermarkt. (Schwarz, 2009)
 Maria went to-the/to the supermarket
 ‘Maria went to the supermarket’

⁵In the previous chapter I have also shown that, in order to cover plural definites, the uniqueness presupposition attributed to definites has to be replaced by the maximality presupposition. Maximality covers both singulars and plural cases. However, for expository reasons related to the analysis I am about to explain, and because in any case I will be dealing with singular cases most of the time, I continue accounting for the definite article in terms of uniqueness.

Interestingly, something similar happens with generic definites. The following sentence -which makes a statement not about a particular zebra, but about the kind zebra- is only acceptable if the definite article is contracted:

- (94) Am/#an dem Zebra kann man sehen, dass die Natur symmetrisch ist. (Schwarz, 2009)
 On-the/on the zebra can one see that the nature symmetrical is
 ‘The zebra shows us that nature is symmetrical.’

Schwarz attributes a presuppositional uniqueness-based meaning to the contracted form. His analysis only deals explicitly with definites referring to unique ordinary individuals and he leaves for future work the analysis of generic and weak definites. As far as I am concerned, the only two assumptions needed to extend Schwarz’s analysis to cover these cases straightforwardly are i) that both weak and generic definites refer to unique kinds, and ii) that the denotation of the definite article he proposes can range over kinds.

Before I move on to analyze generic and weak definites, let me provide in (95) the denotation I adopt for the singular definite article. This denotation corresponds to a function from properties to truth values which presupposes that the entity x is the unique individual of which the property P holds. Following Partee (1986), uniqueness is indicated by means of the iota-operator:

- (95) $[[the]] = \lambda P \iota x [P(x)]$

Now, if we combine, via Function Application, the denotation of *the* with that of a common noun like *balloon*, which in this context denotes a property of individuals, we obtain an expression of type e corresponding to the unique individual that has the balloon property:

- (96) a. $[[the]] = \lambda P \iota x [P(x)]$
 b. $[[balloon]] = \lambda x [Balloon(x)]$
 c. $[[the\ balloon]] = \lambda P \iota x [P(x)](\lambda x [Balloon(x)])$ by FA
 $= \iota x [Balloon(x)]$

In regular definites like *the balloon*, nouns denote sets of ordinary individuals. However, as I will show in the next section, nouns can also denote sets of kinds.

3.4 Reference to kinds

Kinds can be defined as abstract objects which are representative of a group of individuals with similar characteristics. Since Carlson (1977), it is standardly assumed that NPs can refer to kinds (and subkinds) besides ordinary individuals.⁶ Since then, several authors have studied how this reference is accomplished by different types of NPs in a diverse range of contexts (Carlson, 1977; Chierchia, 1998; Ojeda, 1991; Krifka et al., 1995; Geurts, 2001; Cohen, 2002, 2005; Dayal, 2003, 2004, 2011; Krifka, 2004; Katz and Zamparelli, 2005; Farkas and de Swart, 2007; Farkas and Swart, 2009; Dobrovie-Sorin and Pires de Oliveira, 2007; Mueller-Reichau, 2011; Borik and Espinal, 2012, e.g.). The following sentences illustrate this diversity for English, where bare plurals (97a), indefinites (97b), and definites (97c) can refer to kinds:

- (97) a. **Women** are good managers.
 b. Thomas Stewart had invented **a clamping mop** that could wring the water out of itself by the use of a lever.
 c. **The whale** eats lots of fish and krill in order to fatten up for its long trip to its mating grounds.

Although it is generally assumed that kinds are a unitary notion, it is also accepted that each type of kind-referring NP makes this reference in a distinct way. It is also accepted that each way brings along differences in the interpretation and distribution of the NPs. To discuss these differences is beyond the scope of this dissertation, but I refer the reader to the works listed above.

In what follows I focus on the generic definites that (97c) and, more extensively, (98) illustrate:

- (98) a. **The Dutchman** is a good sailor.
 b. Shockley invented **the transistor**.
 c. **The potato genome** contains 12 chromosomes and 860 million base pairs making it a medium-sized plant genome.
 d. *Context:* In the zoo.
Sentence: Look children! This is **the reticulated giraffe**.

⁶Although I have previously made the distinction between NPs and DPs, on several occasions throughout this dissertation, I will use the abbreviation *NP* to refer to both types of phrases unless the difference between them turns relevant.

Understanding the meaning of these generic definites is essential for my purposes because, as shown before, there is a parallelism between generic and weak definites. This parallelism largely motivates my theory of weak definites.

3.4.1 Generic definites and reference to kinds

Generic definites have received much less attention than other kind-referring expressions, in particular bare plurals. However, works like Ojeda (1991), Chierchia (1998), Dayal (2004, 2013), Krifka (2004), Beyssade (2005), Farkas and de Swart (2007); Farkas and Swart (2009), and Borik and Espinal (2012) are examples of insightful attempts to understand the distribution and meaning of these constructions as well as to differentiate well enough the nature of the kinds they refer to from the kinds bare plurals (and plural generic definites in Romance languages) refer to.

Following Dayal (2004); Krifka (2004); Farkas and de Swart (2007); Farkas and Swart (2009); Borik and Espinal (2012), I assume that the meaning of generic definites results from the combination of the uniqueness-encoding definite article plus nouns denoting properties of kinds, which are conceived as atomic individuals.⁷ According to this analysis, the denotation of a generic definite like *the whale* (in (97c)) corresponds to the unique kind individual of which the whale property holds (the unique member of the singleton $\{\mathbf{W}\}$). This denotation is abbreviated with a capital letter in boldface:

$$(99) \quad [[the\ whale]] = \iota x_k [Whale(x_k)] \\ = \mathbf{W}$$

As simple and intuitive as this denotation may be, there are a few things to remark about it. First, this denotation obviously implies that the iota-operator represented by the definite article can bind kind variables (e.g. x_k) in addition to individual variables (e.g. x_i). This is an attractive assumption as there is no apparent reason why the iota operator, like the existential and universal quantifier, is unable to bind different sorts of variables.

⁷ I am aware that this analysis is not uncontroversial (see Farkas and de Swart, 2007; Farkas and Swart, 2009, for discussion). I refer the reader to other approaches to generic definites such as Chierchia (1998), who derives the kind reference of generic definites in terms of group individuals.

A second remark is that the adopted denotation implies that NPs can operate at either kinds or ordinary individual levels. This has been independently assumed to account for other phenomena apart from generic definites, such as *incorporation* and *pseudo-incorporation* in a number of languages (see, for example, Dayal, 2003, 2011; Espinal and McNally, 2011; McNally and Boleda, 2004; Dobrovie-Sorin and Pires de Oliveira, 2007).⁸ In the literature there exist at least three ways in which the ability of nouns to operate on both kind and individual levels has been proposed to happen. One is assuming that nouns can systematically denote both properties of ordinary individuals and properties of kinds. This is in line with Dayal (2004) and Farkas and de Swart (2007); Farkas and Swart (2009). Another possibility, proposed by Borik and Espinal (2012), is that nouns always denote properties of kinds and that the number projection (NumP) adds the individual level. The idea is that, when this projection is not present, which they claim happens with generic definites, kind level is the only one available. The third possibility, assumed by McNally and Boleda (2004), is that the denotation of nouns includes at the same time both an individual and a kind argument.⁹ To evaluate in detail the advantages of these three possibilities is beyond this dissertation. Instead, only for the sake of simplicity, I adopt the first one, namely, nouns are ambiguous between kind-level and object-level denotations.

The last point about the denotation adopted for generic definites has to do with the conditions under which these definites are acceptable. It is well known that at least in English generic definites are not fully productive. Consider the classical examples in (100), which Carlson (1977) attributes to Barbara Partee.

- (100) a. The Coke bottle has a long neck.
 b. #The green bottle has a long neck.

Based on these examples, Carlson proposes that generic definites are restricted to designating well-established concepts. Accordingly, Coke bottles constitute a well-defined concept whereas green bottles do not, and

⁸Incorporation is the phenomenon whereby two separated words, a noun and transitive verb (e.g. *girl* and *choose*, respectively), form a unit that behaves morphosyntactically and semantically as a single word, an intransitive verb (e.g. *girl-choose*). Pseudo-incorporation is when a noun and a verb form a semantic unit but still behave as separate words. In Chapter 8, I explain both phenomena in more detail.

⁹In this denotation the kind argument is related to the individual argument via Carlson's (1977) Realization Relation, as I will discuss later on.

that explains the contrast above. Dayal (2004) claims that this explanation is not accurate given that contextual manipulation in principle can enable any definite to have an acceptable generic interpretation. As an example, she describes the context of a factory that produces two kinds of bottles, a green one for medicinal purposes and a white one for cosmetics. In that context the definite in (100b) would felicitously refer to a kind.

I believe that at a general level Carlson’s and Dayal’s ideas about the licensing of generic definites are complementary rather than opposite. I believe that what licenses the generic reading of a definite is the presence of appropriate circumstances leading to the identification of an specific enough kind, similar to what happens with regular definites referring to unique ordinary individuals. In this view, well-establishedness is one of these circumstances enabling unique reference because what it does is to differentiate the kinds well enough, just as happens with some “universally” unique individuals (e.g. the moon). In the example of *the Coke bottle*, general world knowledge enables us to interpret the definite as referring to the uniquely identifiable Coke bottle kind. In contrast, in the example of the green bottle, an appropriate context sets up the unique identifiability of the kind of green bottles so that a definite can pick it up.

Notice that this explanation of the bottle examples partly differs from Dayal’s explanation. The reason is that, in fact, I disagree with part of her proposal. According to her, generic definites refer to kinds that are atomic but also part of a taxonomy. Following this view, definites can only be successfully interpreted generically when the context invokes the appropriate level of the taxonomy such that no sub-kinds of the relevant type are included. Only in this way can the kind referred to be unique in the context. For example, *the lion* can refer to the unique kind **L** only when subkinds of the species *Panthera leo* are not part of the domain of evaluation of the definite. I see a problem with this proposal. Although it seems intuitively right to account for natural species, which by definition are associated with taxonomies, the idea that taxonomic structures are necessary for generic readings to be licensed seems ad hoc and unnecessary for the bottle examples in the factory contexts. According to Dayal, what the factory context would be doing is to set up a taxonomy constituted by two types of bottles, the green one and the blue one. In that taxonomy the green bottle is a unique kind. I do not see why such a taxonomy would be necessary if what the context is doing in any case is to make the green bottle kind uniquely identifiable.

There are other ways to achieve unique reference of kinds. One way is by modifying the definites with adjectives operating at the level of kinds, as in *the Persian cat* in (101a) (see McNally and Boleda, 2004; Arsenijević et al., 2010). However, the question then is what exactly the modifier is doing there. One option would be that the adjective narrows down the evaluation domain of the definite to the extent that it creates the effect of uniqueness. Intriguingly, as *the French cat* in (101b) shows, not every modifier works equally well to license generic definites. This suggests that kind-level modifiers create well-established kinds sometimes but not always. That would be the case for *the Persian cat* but not for *the French cat*:

- (101) a. The Persian cat is one of the most popular breeds of cats around.
 b. ? The French cat is one of the most popular breeds of cats around.

Another context which easily leads to reference of uniquely identifiable kinds is when we use definites like *the piranha* (102) or *the transistor* (103), which are normally used to talk about natural kinds or artifacts, respectively, rather than to refer to particular ordinary individuals:

- (102) The piranha is a type of freshwater fish found in the rivers of the South American jungles.
 (103) The transistor was invented by John Bardeen.

Compare these examples with other names of other more familiar species and artifacts such as *the cat* or *the bed*, whose generic interpretations are less acceptable:

- (104) a. ? The cat is a type of pet very popular among singles.
 b. ? The bed was invented by Egyptians.

As can be seen, there is still much to investigate about generic definites and their conditions of acceptability. In particular, the notion of well-establishedness needs further investigation given its relevance not only to the interpretation of generic definites but also to that of weak definites. For further discussion see, for example, Zwarts (2014), who discusses how the identifiability of kinds can be analyzed in terms of frames that can be culturally and contextually conditioned.

To recapitulate the main point of this section, I assume that generic definites refer to atomic individuals which are uniquely identifiable in the context in various ways. In the next section, I propose to extend this assumption to weak definites.

3.4.2 Weak definites and reference to kinds

Having discussed generic definites, I can now proceed to determine the meaning of weak definites. The proposal is that weak definites, just like generic definites, refer to kinds. Thus, for example, the definites *the newspaper* and *the violin* in sentences (105a) and (105b) refer, respectively, to the unique kind **N** and the unique kind **V**, as the denotations in (106) show:

- (105) a. Lola is reading the newspaper.
 b. Marika played the violin.
- (106) a. $[[the\ newspaper]] = \iota x_k [Newspaper(x_k)]$
 $= \mathbf{N}$
 b. $[[the\ violin]] = \iota x_k [Violin(x_k)]$
 $= \mathbf{V}$

Analyzing weak definites as kind-referring expressions accounts for three of the special properties of weak definites. First of all, it accounts for the main anomaly of weak definites compared with regular definites, namely, the presence of a definite article despite the lack of uniqueness at the level of ordinary entities. With a weak definite, what licenses the definite article is the uniqueness of the kind referred to.

The present proposal can also account for the restrictions on modification exemplified in (77). If weak definites denote kinds, then the nouns heading them must also range over kinds rather than over ordinary individuals. Adjectives like *old* are predicates of individuals, which means that they are incompatible with kind-referring nouns. Thus, a definite like *the old hospital* can only refer to an ordinary individual. This reasoning leads to a prediction, namely, that weak definites only combine with adjectives operating at the level of kinds. In this case, the adjective combines with a noun ranging over kinds, generating a NP that also denotes the singleton set of kinds from which the definite article can pick its unique member. Following McNally and Boleda (2004), an

example of this type of adjective would be *psychiatric*. The idea is that in a definite like *the psychiatric hospital*, the noun *hospital* refers to a set of hospital kinds, which the adjective takes and maps to the singleton set of psychiatric hospital kinds. The prediction that weak definites are only able to combine with kind-level adjectives is confirmed by the results of some experiments reported in Aguilar-Guevara and Schulpen (2014) and in Chapter 4. These experiments show that weak definites modified by kind-level adjectives in VP-ellipsis sentences allow sloppy readings significantly more than regular definites and weak definites modified by object-level adjectives.

Interestingly, the proposal that weak definites, just like generic definites, refer to unique kinds explains the resemblance between the two types of phrases. However, it also leads to the observation of one initial problem with the proposal. Compare the weak definite sentences in (105) with the following generic sentences:

- (107) a. The newspaper is a rich source of information.
 b. The violin in its present form emerged in the early 16th century in Northern Italy.

The generic sentences in (107) contain the (arguably) kind-level predicates *source of information* and *emerge* which as such can straightforwardly apply to the kinds referred to by the generic definites. In contrast, the weak definite sentences in (105) contain the *object-level predicates* (i.e. individual-level or stage-level predicates) *read* and *play*, which as such cannot apply to kinds.

This problem brings me to the next step of the analysis, namely, to determine how the kinds denoted by weak definites can be realized in order to combine with object-level predicates.

3.5 Kinds realized

Every semantic analysis using of the notion of kinds also needs to consider how these kinds are instantiated by particular individuals. In the case of weak definites this is necessary because a sentence like *Lola took the train* in the end predicates about an event in which Lola directly interacts with (at least) one individual of the train kind rather than with the kind itself, which is an abstract entity. Following Carlson (1977), I assume that this

instantiation of kinds occurs via the realization relation R , which relates individuals and the kinds they are realizations of:

(108) *Realization Relation*

$R(a, \mathbf{A})$ if the object a instantiates the kind \mathbf{A} .

Thus, if \mathbf{A} is the train kind, then $R(a, \mathbf{A})$ means that the individual a is a realization of that kind, i.e. a train. Crucially, this kind can be instantiated not only by an entity but also by a sum of entities. So, in the case of the kind \mathbf{T} , not only is every individual train a realization of \mathbf{T} , but also every plural sum of trains. This makes it possible for sentence (109) to refer to a situation in which Lola actually took two trains to go to Nijmegen from Amsterdam. Even though there is a plurality of trains at the lower level of realizations, there is still uniqueness at the higher level of kinds:

(109) Lola took the train from Amsterdam to Nijmegen.

Having the realization relation at our disposal, it is possible to be more specific about the interpretation of generic definites in sentences in which these definites combine with object-level predicates, as the following examples illustrate:

- (110) a. The violin has no frets to stop the strings.
b. The newspaper comes in a plastic bag when it rains.

Following Krifka et al. (1995), we can say that sentence (110a) conveys a generalization about individuals that are realizations of the violin kind, namely, that these individuals have no frets to stop their strings. Likewise, sentence (110b) conveys a generalization about both individuals that are realizations of the newspaper kind, and the *situations* in which these realizations come and it rains. The generalization in this case is that these realizations come in a plastic bag.

To capture these generalizations, the *generic operator* GEN can be used. This operator is conceived as a sort of invisible adverbial quantifier close in meaning to *usually*. Following Krifka et al., I adopt the simplified representation of GEN in (111). According to this, GEN can range over both individuals (represented by $x_1 \dots x_i$) and situations (represented by $s_1 \dots s_i$) and, like other adverbial quantifiers, has a restrictor and a matrix term:

(111) GEN $[x_1 \dots x_i, s_1 \dots s_i]$ (Restrictor; Matrix)

The meaning of the sentences in (110) (repeated in (112a) and (113a)) is represented in (112b) and (113b), respectively:

- (112) a. The violin has no frets to stop the strings.
 b. GEN $[x_i]$ ($R(x_i, \mathbf{V})$; x_i has no frets to stop the strings)
- (113) a. The newspaper comes in a plastic bag when it rains.
 b. GEN $[x_i, s]$ ($R(x_i, \mathbf{N}) \wedge$ it rains in $s \wedge x_i$ comes in s ; x_i comes in a plastic bag in s)

In the partial semantic representation of (112a) in (112b), GEN takes realizations of the violin kind as its restrictor and the individuals that have no frets to stop their strings as its matrix. Likewise, in the representation of (110b) given in (113), realizations of the newspaper kind as well as situations in which they come and it rains are part of the restrictor, and individuals that come in a plastic bag are part of the matrix.

3.6 The logical form of weak definite sentences

Let me now combine the insights from Sections 3.4 and 3.5 to develop a semantic representation of sentences with weak definites. This proposal is very much inspired by the account that Dayal (2003, 2011) and Espinal and McNally (2011) provide for sentences with bare singulars in Hindi and in Spanish and Catalan, respectively. However, my analysis differs from theirs in one very important matter, namely, whereas both Dayal and Espinal and McNally treat bare singulars as cases of pseudo-incorporation, I do not assume that for weak definites.¹⁰

Returning to the logical form of weak definite sentences, consider again the example of Lola reading the newspaper, repeated in (114). Thinking in Neo-Davidsonian terms, we can say that this sentence expresses that Lola was involved in a reading event with at least one instantiation of the newspaper kind. This could be represented in either of the two ways shown in (114a) and (114b):¹¹

¹⁰In Chapter 8, apart from explaining what pseudo-incorporation is, I summarize Carlson et al.'s (2014) ideas to analyze weak definites in terms of pseudo-incorporation.

¹¹Remember that, following Parsons (1990), I assume that verbs are predicates over events and thematic roles are functions from events to participants (atoms or sums). Also, for the sake of simplicity, I am omitting tense and aspect information.

(114) Lola read the newspaper.

- a. $\exists e[Read(e) \wedge Ag(e) = lola \wedge R(Th(e), \mathbf{N})]$
- b. $\exists e \exists x_i[Read(e) \wedge Ag(e) = lola \wedge Th(e) = x_i \wedge R(x_i, \mathbf{N})]$

According to the logical form in (114a), the sentence is true if and only if there is at least an event and this is an event of reading, and the agent of that event is Lola, and the theme of that event instantiates the newspaper kind. On the other hand, following the logical form in (114b), the sentence is true if and only if there is an event and there is an individual such that the event is a reading event, and the agent of that event is Lola, and the individual is the theme of the event and that individual instantiates the newspaper kind.

In a way, (114a) and (114b) are truth-conditionally similar. Both (114a) and (114b) correspond to sets of reading events of which Lola is the agent, and instantiations of the newspaper kind are the theme.¹² The only difference is that (114a), in contrast to (114b), does not state explicitly the existence of an individual which would be the theme of the event and the instantiator of the newspaper kind. (114a) avoids stating that by omitting existential quantification over individuals and by using the functional expression $Th(e)$ directly as the first argument of the realization relation.

The difference between (114a) and (114b) is not trivial. In dynamic semantic approaches to nouns phrases, it is commonly assumed that the presence of existential quantifiers over individuals typically provides for the establishment of referents into discourse (Heim, 1982; Kamp, 1981; Groenendijk and Stokhof, 1990, 1991). Following this assumption, Espinal and McNally (2011) make direct use of $Th(e)$ as the first argument of the realization relation in order to avoid this type of quantification and then be consistent with the deficient referential status of bare singular nouns in Spanish. The same strategy is adopted in (114a) predicting then that weak definites do not set up discourse referents at individual level. In contrast, (114b) predicts that weak definites are referential in this

¹²The sets of events that both logical forms represent can be more easily seen if the existential quantifier over events is replaced by a lambda operator:

- (1) a. $\lambda e[Read(e) \wedge Ag(e) = lola \wedge R(Th(e), \mathbf{N})]$
- b. $\lambda e \exists x_i[Read(e) \wedge Ag(e) = lola \wedge Th(e) = x_i \wedge R(x_i, \mathbf{N})]$

sense. We saw in the previous chapter that weak definites do not serve as good antecedents of anaphoric expression and that this suggest that weak definites are discourse referentially defective. Furthermore, in Chapter 7, I will discuss some experimental research carried out by myself and other authors, which point out towards weak definites being discourse referential defective. Accordingly, I opt for the type of logical form in (114a).

There is another aspect of the adopted logical form that is worth remarking given that it accounts for two more properties of weak definites. The properties are sloppy readings in VP ellipsis constructions, and narrow scope interpretations in sentences with quantified expressions. The relevant characteristic of the logical form is that the individual realizations of the kinds are tied to the event variable in a local way. To see how this explains sloppy readings in VP ellipsis, consider the logical form of the sentence in (115). This logical form represents a proposition corresponding to two sets of events of reading; in one of them, the agent is Lola and the theme instantiates the newspaper kind, and in another one the agent is Alice and the theme again instantiates the newspaper kind. Given that the *Th* relation is local to each of the two quantifiers, each instantiation of the newspaper kind alluded here can be a different newspaper. That explains why the sloppy identity between the overt and the elided definite:

- (115) a. Lola read the newspaper and Alice did too.
 b. $\exists e[Read(e) \wedge R(Th(e), \mathbf{N}) \wedge Ag(e) = lola] \wedge \exists e'[Read(e) \wedge R(Th(e'), \mathbf{N}) \wedge Ag(e') = alice]$

Similarly, the narrow scope effect in sentences with quantified expressions is due to the fact that the event quantifier always has narrow scope with respect to the scope bearing operator, and the thematic role is dependent upon the event variable. This is illustrated below:

- (116) a. Every librarian read the newspaper.
 b. $\forall y[Librarian(y) \rightarrow \exists e[Read(e) \wedge R(Th(e), \mathbf{N}) \wedge Ag(e) = y]]$

Despite the advantages of the logical forms I am attributing to sentences with weak definites, these formulas still do not suffice to account for the complete interpretation of the sentences. In particular, these logical forms still do not capture meaning enrichments. This leads me to the next step of my analysis.

3.7 Stereotypical usages

Sentence (117) not only expresses that there was an event in which Alice goes to a location that qualifies as a hospital. Crucially, it also expresses that in this event the typical purpose of hospitals, namely to provide medical services, was fulfilled. Likewise, sentence (118) not only expresses that there was an event in which Alice examines an object that is classified as a calendar. Furthermore, it conveys that she did so to benefit from the stereotypical purpose of a calendar, namely, to provide information regarding the availability of a person or an institution in the days, weeks, and months of a particular year:

- (117) Alice went to the hospital = Alice went to a hospital + to get medical services.
- (118) Lola checked the calendar = Lola checked a calendar + to check availability.

In general it is possible to say that sentences with weak definites not only predicate about an event in which an agent interacts with instantiations of a kind. Crucially, these events involve the most typical purpose associated with the kind. In other words, the event predicated about is part of the most typical circumstances under which objects of a particular kind are used. I call these circumstances *stereotypical usages* (SUs). In Chapter 5, I characterize SUs in more detail and motivate their participation in the interpretation of weak definites based on the lexical semantics of the nouns heading them.

The relevant question now is how to capture SUs formally. To do so, I assume an additional restriction on the events quantified over in the logical form of the sentences. I do so by means of the Stereotypical Usage Relation U , which is defined as follows.

- (119) *Stereotypical Usage Relation*
 $U(e, \mathbf{K})$ if the event e is a stereotypical usage of the kind \mathbf{K} .

Through the relation U , a kind \mathbf{K} is associated with events in which its instantiations function in ways that are stereotypical for \mathbf{K} . Notice two relevant properties of this predicate. First, the U predicate relates stereotypical events with kinds rather than with ordinary individuals. This follows the assumption that stereotypes are constructed from *types* of objects rather than from the objects themselves (see Chapter 5). Second,

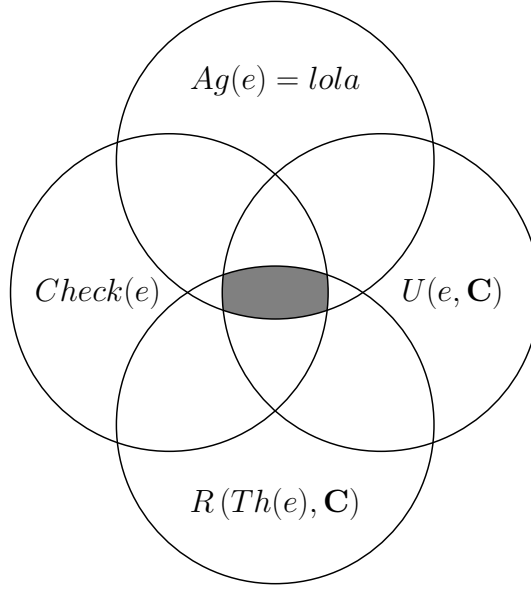
incorporating the U predicate into the logical form of weak definite sentences has as a consequence that the specification this predicate makes (i.e. that the events quantified over correspond to SUs of a kind) is part of the truth-conditional meaning of the sentences rather than a conversational implicature or a presupposition. Chapter 6 provides arguments in favor of this treatment. It shows that, unlike other non-asserted meanings, enriched meanings exhibited by weak definite sentences are, among other things, non-defeasible and at-issue meanings.

Once we have the U predicate at our disposal, it is possible to provide complete analyses of weak definite sentences. Thus, for example, the sentence about Lola checking the calendar (repeated in (120a) and translated in (120b)) express that there is a non-empty set of events of checking in which the agent is Lola and the theme is a realization of the calendar kind, such that this set of events is part of the set of events in which calendars are used in ways that are stereotypical for their kind. Similarly, the sentence about Alice going to the hospital (repeated in 121a and translated in 121b) denotes a non-empty set of events of goal-directed motion in which the agent is Alice and the location is a realization of the hospital kind, such that in those events the hospital kind is fulfilling its stereotypical function. In relation to sentence (121), I must acknowledge that for convenience I have made two simplifications in the analysis. First, the combination *go to* is analyzed as one event predicate. Second, stereotypicality usages are directly connected to this event, although strictly speaking they are connected to the event of being at the hospital.

- (120) a. Lola checked the calendar.
 b. $\exists e[Checked(e) \wedge Ag(e) = lola \wedge R(Th(e), \mathbf{C}) \wedge U(e, \mathbf{C})]$
- (121) a. Alice went to the hospital.
 b. $\exists e[Go-to(e) \wedge Ag(e) = alice \wedge R(Loc(e), \mathbf{H}) \wedge U(e, \mathbf{H})]$

The inclusion of U into the logical form of weak definite sentences is advantageous not only because it captures the meaning enrichment displayed by the sentences. In addition, it leads to a straightforward explanation of the lexical restrictions weak definites are subject to. Recall that, as the examples in (122) compared to (120a) show, not every noun can occur in a weak definite and that not every verb can govern a weak definite:

- (122) a. Lola read #the calendar.

FIGURE 3.1: *Lola checked the calendar.*

- b. Lola checked #the book.
- c. Lola read #the book.

To facilitate my explanation, I represent graphically the logical form of the sentence about Lola checking the calendar. Figure 3.1 shows that this logical form corresponds to a non-empty intersection of the set of events of checking, the set of events in which Lola is the agent, the set of events in which the theme is the realization of the calendar kind, and the set of SUs associated with that kind.¹³ This is in the spirit of Neo-Davidsonian event semantics, which analyzes sentences as a conjunction of conditions on the event variable.

Let me then focus on the intersection between the set of events $\lambda e[V(e)]$ corresponding to the verb *to check*, i.e. $\lambda e[Check(e)]$, and the set of events $\lambda e[U(e, \mathbf{K})]$ associated with the SUs of the calendar kind, i.e. $\lambda e[U(e, \mathbf{C})]$. My proposal is that it is precisely the existence of the intersection between $\lambda e[V(e)]$ and $\lambda e[U(e, \mathbf{K})]$ which ultimately triggers the weak reading of a kind-referring definite. Compare the interaction between these two sets

¹³In Figures 3.1 and 3.2, the lambda operator is omitted only for convenience.

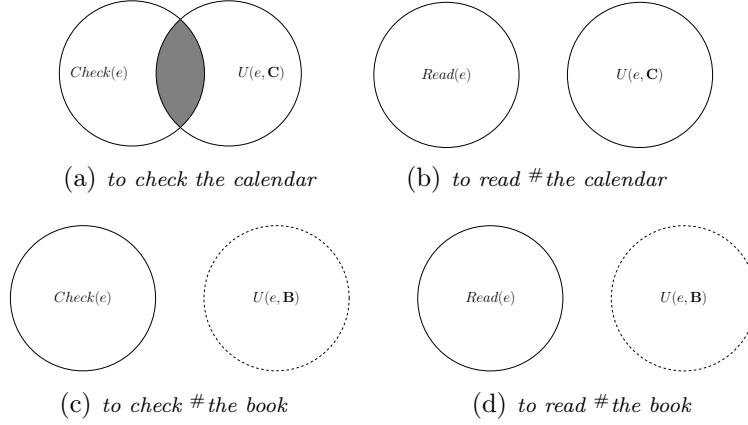


FIGURE 3.2: Interaction between sets U and V in different VPs.

in *to check the calendar* (in Figure 3.2(a)) with the interaction between these two sets in *to read #the calendar* (in Figure 3.2(b)). In this case, the verb *to check* is replaced by *to read*, which does not allow its definite object to be interpreted weakly. Consistent with my proposal, the idea is that here $\lambda e[U(e, \mathbf{K})]$ and $\lambda e[V(e)]$ do not have a non-empty intersection, as reading is not part of the SUs of calendars. Analogously, we could say that the VP *to check #the book*, which substitutes the noun *calendar* by *book*, does not trigger any weak reading because the set of events of checking does not intersect the set of SUs attributed to the book kind. However, there is a potential problem with this argument, namely, that the VP *to read #the book* does not trigger any weak reading either, despite the fact that books are made for reading. As reading is probably part of the typical actions associated with books, it doesn't seem to be intuitive to attribute the absence of weak readings to an empty intersection of $\lambda e[U(e, \mathbf{K})]$ and $\lambda e[V(e)]$. That is why, in this case, I assume that the book kind is simply not associated with any SU at all (see Figures 3.2(c) and 3.2(d)). This assumption, related to the fact that concepts like *book* are too general to be identified with stereotypes, is defended in Chapter 5. Also, see Zwarts (2014) for a discussion of the lexical restrictions of nouns in weak definites in the context of frames.

3.8 Combining verbs with weak definites

Let me now return to the compositional structure of sentences with weak definites. I start by deriving the meaning of VPs containing weak definites. Recall that I adopt Kratzer's (1996) assumptions that external arguments are introduced independently and not as part of the lexical semantics of verbs, and that the existential quantifier over events is introduced by the tense-aspect system. In other words, the subject can be treated as simply adding a thematic condition on the event. I make this assumption primarily because it makes the analysis of the verb a bit easier. Thus, the meaning of weak definite VPs can be illustrated as follows:

- (123) a. $[[\text{read the newspaper}]] = \lambda e[\text{Read}(e) \wedge R(\text{Th}(e), \mathbf{N}) \wedge U(e, \mathbf{N})]$
 b. $[[\text{go to the hospital}]] = \lambda e[\text{Go-to}(e) \wedge R(\text{Loc}(e), \mathbf{H}) \wedge U(e, \mathbf{H})]$

Abstracting over the kind argument of VPs, we obtain the following verb meanings:

- (124) a. $[[\text{read}]] = \lambda x_k \lambda e[\text{Read}(e) \wedge R(\text{Th}(e), x_k) \wedge U(e, x_k)]$
 b. $[[\text{go-to}]] = \lambda x_k \lambda e[\text{Go-to}(e) \wedge R(\text{Loc}(e), x_k) \wedge U(e, x_k)]$

What we have in (124a) and (124b) are enriched kind-level denotations of the verbs *to read* and *to go to*. I propose that these meanings are derived from the ordinary object-level meaning of verbs by means of a lexical rule, which is defined as follows:

- (125) *Kind Lifting Rule*
 If V is a transitive verb (or verb-preposition combination) with an internal argument Arg and V has the meaning $\lambda x_i \lambda e[V(e) \wedge Arg(e) = x_i]$, then V also has the meaning $\lambda x_k \lambda e[V(e) \wedge R(Arg(e), x_k) \wedge U(e, x_k)]$.

This lexical rule (*KLR*) can be seen as a general type-shift function (or rather, sort-shift function) *à la* Partee (1986). This implies that this rule is a mechanism of generation of predicates which in principle can apply to any verb and verb-preposition combination yielding a function that can take any atomic kind. However, this does not mean that the occurrence of weak definites is predicted to be productive. As we have seen in the previous section, two circumstances must co-occur in order for the lifted enriched predicates to trigger weak definite readings. The first one is

that the predicate applies to a kind associated with SUs. The second circumstance is that the set of events corresponding to SUs and to the predicate overlap. To capture the confluence of these circumstances, I propose the following condition of applicability of the KLR.

(126) *Condition of applicability of the KLR*

A verb or verb-preposition combination V with the meaning $\lambda x_i \lambda e [V(e) \wedge \text{Arg}(e) = x_i]$ can also get the meaning $\lambda x_k \lambda e [V(e) \wedge R(\text{Arg}(e), x_k) \wedge U(e, x_k)]$ and then combine with a DP referring to an atomic kind \mathbf{K} iff $\lambda e [V(e)] \cap \lambda e [U(e, \mathbf{K})] \neq \emptyset$.

Only if this condition is satisfied, the weak reading of a definite can emerge. One unsatisfying situation would of course be if the set of events corresponding to U and to V do not intersect. This is what I propose to be happening in *fixing the radio* as opposed to *listening to the radio*: the set of events corresponding to the verb *to fix*, in contrast with *to listen*, does not intersect the set corresponding to the SUs associated with the kind referred to by *the radio*. Another situation not fulfilling the condition above would be if the kind referred to by the definite in question is not at all associated with SUs. In this case, there would be no set intersecting the set corresponding to V . This is what I propose to be happening in *listening to the walkie-talkie*: the kind referred to by *the walkie-talkie* is not associated with SUs.

3.9 Discussion

3.9.1 Summary of the proposal

I have proposed that weak definites refer to kinds which combine with object-level predicates by means of the KLR. This lexical rule lifts object-level predicates to kind-level predicates, indicates that the kinds that the lifted predicates combine with are instantiated via the realization relation R , and incorporates the relation U into the denotation of the lifted predicates, which corresponds to stereotypical usages of kinds.

3.9.2 Properties accounted for by the proposal

Let me now summarize how this proposal accounts for most of the properties of weak definites listed in Section 3.1. First of all, the assumption

that a weak definite is an ordinary definite, but referring to kinds, explains both the presence of the definite article in these constructions and the lack of the uniqueness presupposition at the level of ordinary individuals. Given that uniqueness applies at the level of kinds and given that instantiations of kinds can be entities or sums, sentences with weak definites are felicitous in contexts where more than one entity satisfies their descriptive content (71). The kind-referring nature of weak definites also explains the resemblance between these and generic definites (81). Also, this kind-referring nature explains why modifiers operating at the level of individuals are incompatible with weak readings (77a), and predicts that only kind-level modifiers are able to maintain these readings (77b). The logical form attributed to sentences with weak definites, which does not involve existential quantification over individuals, is consistent with the incapacity of weak definites to establish discourse referents (79). In this type of logical form, the thematic role is specific for each event. That explains why there is sloppy identity in sentences with VP-ellipsis (72). Narrow scope is due to the same reason, because the event quantifier has narrow scope with respect to scope bearing operators (73). The fact that weak readings of definites are due to the application of the KLR accounts for the fact that weak definites typically occur as objects and not as subjects (80) because this rule affects internal arguments which typically correspond to objects and not to subjects. The presence of the *U* predicate that the KLR incorporates into the lifted predicates, which relates SUs to kinds, captures the enriched meaning of weak definite sentences (78). Finally, the association with SUs also accounts for the lexical restrictions of weak definites: only certain nouns that support stereotypical usage patterns trigger weak readings (74). Likewise, only verbs and verb-preposition combinations associated with these patterns support weak readings (75).

3.9.3 Properties that still need to be explained

The present approach is challenged by some properties of weak definites, namely, the existence of plural weak definites, the existence of weak definites in subject position, and the existence of weak definites in prepositional phrases. In the coming subsection, I will explain the problem that each fact represents and discuss informally a tentative solution to be developed in future research.

3.9.3.1 Plural weak and generic definites and the problem of accounting for number restrictions

We saw in the previous chapter that although most of weak definites are singular, there are a few plural cases, as the following example illustrates:

(127) Alice went to the mountains.

Just like it happens with singular weak definites (128), the number morphology of plural weak definites cannot be altered without losing the weak reading (129):

- (128) a. Lola took the elevator.
b. Lola took #the elevators.

- (129) a. Lola went to the mountains.
b. Lola went to #the mountain.

The same phenomenon occurs with generic definites, i.e. both plural (130) and singular (131) become less acceptable if the number morphology is modified:

- (130) a. The mountains are the perfect place to get away from the hustle and bustle of the city.
b. ? The mountain is the perfect place to get away from the hustle and bustle of the city.
- (131) a. Nowadays, the elevator has become an indispensable tool for transportation in our society.
b. ? Nowadays, the elevators have become an indispensable tool for transportation in our society.

The existence of plural weak and generic definites prevents me from providing a “simple” explanation to the number restriction both types of definites are subject to. If plural weak definites would not exist, I could say that the number morphology cannot be changed because plural morphology is incompatible with reference to atomic kinds. However, given that for the opposite fact (that plural weak definites cannot be singularized) this explanation obviously does not apply, then it is necessary to find another explanation which can cover both sides of the number restriction.

To account for plural weak definites, one possibility is to treat the head nouns as a sort of *pluralia tantum* nouns, which do not compositionally relate to their singular counterparts. In other words, these nouns, instead of just referring to the sums of atomic individuals that the singular counterparts refer to, designate other individuals which certainly involve plurality but in the way it happens with collective nouns, such as *baggage* or *pride*. Accordingly, the plural noun *mountains* does not refer to a sum of mountains but rather to a collection, which, by the way, not only includes mountains but also the other surfaces between the mountains such as valleys and lakes.

Although this explanation seems to be intuitively correct, it has a potential problem. The nouns heading plural weak definites would differ from classical pluralia tantum nouns such as *stairs*, *scissors* in at least two aspects. First, unlike the noun *mountain*, the singular versions of *scissors* and *stairs* are ill-formed if occurring alone (they are fine in compounds like *staircase* or *scissorhands*). Second, in principle nouns like *scissors* can be used to refer to ordinary individuals (132a) and to kinds (132b). In the case of *mountains*, it would be necessary to assume that the pluralia tantum reading only emerges when the nouns operate at the level of kinds.

- (132) a. I love the new scissors I bought from your website.
 b. The scissors is one of the most ingenious and useful tools ever devised.

If none of the reasons above represent a big problem to treat plural nouns heading weak definites as cases of pluralia tantum, then I am ready to provide the same explanation to why *mountains*, in contrast to *mountain*, can trigger weak readings (130), and why *elevator* can occur in a weak definite, but *elevators* cannot do so (131). What I propose is to attribute the contrasts to the same reason I have given before to explain why some nouns trigger weak readings and some others do not do so: only those nouns associated with stereotypical usages can trigger weak readings. In other words, even when in principle *mountains* and *mountain* can derive a kind reading, only the former is related to SU, which in this case is a recreative activity that involves hiking, camping, climbing, etc. Only *mountains* is associated with this activity because this noun, unlike *mountain*, designates a collection of mountains together with the valleys and lakes between the mountains where people typically go to hike, camp,

climb, etc. Consequently, only *mountains* can trigger the application of the KLR and derive a weak reading. Similarly, for the contrast *elevator* vs. *elevators*, I propose that only the singular version can refer to atomic kinds as the plural ones cannot be interpreted as designating a collection of items associated with typical activities. In other words, *elevator* can pick atomic kinds and trigger weak readings because it is associated with SUs, namely, transporting individuals. On the contrary, *elevators* cannot pick any collection of individual associated with SUs and thus *the elevators* cannot trigger any weak reading.

3.9.3.2 Weak definites in subject position

We saw in the previous chapter that, although weak definites typically occur as objects of episodic sentences, a few definites in subject position of episodic sentences receive an interpretation that seems to be analogous to that of weak definites. Consider the following examples:

- (133) a. Yesterday **the train** passed through here only four times.
 b. I used to hear **the newspaper** arrive in the wee hours of the morning.
 c. **The plumber** came and repaired the pump next day.
 d. Despite the heavy rain, the window was open and **the radio** was playing loudly.

Apart from not (necessarily) referring to unique individuals, these definites also display other relevant properties weak definites in object position do, as the examples below show. They display ‘sloppy’ interpretation in sentences with elided constituents (134), ‘narrow scope’ interpretations in quantified sentences (135), number restrictions (136), lexical restrictions (137), modification restrictions (138), and enriched meanings (139):¹⁴

¹⁴On the other hand, the capacity of these definites to serve as good antecedents of anaphoric expressions (1) is less questionable than that of weak definites in object position (2):

- (1) Yesterday **the plumber** had to come. I was very impressed with his_i ability to repair the pipes.
 (2) ? Yesterday I called **the plumber**. I was very impressed with his_i ability to repair the pipes.

One possible explanation for this contrast is that NPs in subject position are typically interpreted as topical information. That probably makes the coreference with a

- (134) Yesterday **the plumber** came and today as well.
(A different plumber could have come each day)
- (135) Due to the flooding of last week **the plumber** had to visit each house on this street and repair its heating system.
(A different plumber could have visited each house)
- (136) Yesterday #**the plumbers** had to come and today as well.
(The same plumbers came yesterday and today)
- (137) Yesterday #**the repairman** had to come and today as well.
(The same repairman came yesterday and today)
- (138) Yesterday #**the handsome plumber** had to come and today as well.
(The same plumber came yesterday and today)
- (139) Yesterday #**the plumber** came = Yesterday a plumber came + to do some plumbing.

If we accept that the cases above are examples of weak definites, then they represent a problem for my theory of weak definites. Recall that according to this theory the emergence of weak readings depends on the application of the KLR to object-level predicates. This rule transforms these predicates into kind-level predicates and incorporates into their lexical meaning the relation U , which relates the internal argument of the predicates, a kind argument, with the set of events that are stereotypical for the kind. Weak definites in subject position in principle correspond to external arguments and as such they do not depend on the KLR to generate the weak reading because external arguments are not part of the lexical meaning of verbs. To account for these potential cases, one alternative would be to treat them as arguments of *unaccusative* verbs, which, although internal, occupy the subject position for syntactic reasons (Perlmutter, 1978; Burzio, 1986; Levin and Hovav, 1995). That option could work for verbs like *to arrive* whose argument looks more like a theme than like an agent. However, to treat verbs like *to repair*, whose argument is agentive as cases of unaccusativity is challenging. I leave this issue for further research.

pronoun more acceptable independently of the discourse referential properties of the NPs attributed to their form and meaning.

3.9.3.3 Weak definites in non-argumental prepositional phrases

The KLR, as stated in (125), applies to verbs and verb-preposition combinations only. Interestingly, weak definites can also occur as objects of prepositional phrases that are not governed by a verb. Consider the following examples:

- (140)
- a. She juggles writing stories for children with writing articles about ladies who didn't realize they were pregnant until they gave birth **in the supermarket**.
 - b. There hasn't been pop excitement like it since Duran Duran and Spandau Ballet bumped into each other **in the hair-dresser** back in 1984.
 - c. The other day a young high school couple broke up **at the library**.

Weak definites in non-argumental prepositional phrases challenge my analysis of weak definites because they are not covered by the KLR. One solution would be to extend the applicability of the KLR to these prepositions. One problem with working out this extension is that, as the application KLR involves the incorporation of the *U* predicate, then it would be necessary to assume that these prepositions, just like verbs, include an event argument in their lexical semantics. Such an assumption is not well-established and therefore it would be necessary to substantiate it in further research.

3.10 Conclusion

This chapter presented an analysis of weak definites, which accounts for most of the peculiar properties of weak definites discussed in Chapter 2. After the introduction in Section 3.1, Section 3.2 outlined the theoretical and notational conventions assumed in the analysis. Then, Section 3.3 provided the semantics attributed to the definite article present in weak definites. Thereafter, Section 3.4 stated the main proposal of the analysis, namely, that weak definites refer to atomic kinds. Then, Section 3.5 proposed that when these kinds combine with object-level predicates, they are instantiated by means of the Carlsonian Realization Relation. Section 3.6 proposed a Neo-Davidsonian style of logical form for weak definite sentences. Crucially, this type of logical form lacks of explicit

existential quantification over individuals instantiating the kinds. Section 3.7 discussed stereotypical usages of kinds and proposed that these are captured in the logical form of the sentences by means of the predicate U , which relates kinds with the set of events in which their instantiations function in ways that are stereotypical for the kinds. Section 3.8 discussed the combination of weak definites with object-level predicates and proposed that this happens due to the KLR, a lexical rule that lifts these predicates to kind-level predicates and incorporates the U predicate into the lifted versions' denotation. Finally, Section 3.9 discussed the virtues and challenges of the analysis.

Some of the components of the present analysis make a number of important predictions. In the coming chapters, I aim to corroborate the predictions both theoretical and empirically and, in that way, motivate better their inclusion in my theory. The components are reference of weak definites to kinds; the association of these kinds with stereotypical usages; the inclusion of the U predicate in the denotation of verbs (and verb-preposition combinations) governing weak definites, via the KLR, and thus in the logical form of the sentences; and the lack in this logical form of explicit existential quantification over individuals instantiating the kinds. The proposal that weak definites refer to kinds predicts that only adjectives operating on the level of kinds should be able to occur in weak definite configurations. I corroborate this prediction in Chapter 4 by discussing the semantics of relational adjectives and presenting the results of some experiments that tested the interpretation of modified and non-modified definites.

The association of kinds with SUs and the fact that this is captured via the inclusion of the U predicate in the denotation of verbs by virtue of the KLR predict two things. First, it predicts that only nouns designating objects that are used in a stereotypical way can occur in weak definites. Second, it predicts that only verbs and verb-preposition combinations supporting these stereotypes can govern weak definites. Both predictions are corroborated in Chapter 5 where I explore the lexical semantics of nouns and predicates occurring in weak definite configurations.

On the other hand, the presence of the U predicate in the logical form of weak definite sentences predicts that the meaning enrichments the sentences display are (at least partly) truth-conditional. This prediction is confirmed in Chapter 6, where I assess the properties of these meaning enrichments and compare them with those of conversational implicatures, conventional implicatures, presuppositions, and idiomatic meanings.

Finally, the fact that the logical form of weak definite sentences lacks of explicit existential quantification over individuals instantiating the kinds predicts that weak definites are not able to establish discourse referents. In Chapter 7, I provide arguments supporting this treatment and also discuss experimental research carried out by myself and by other authors who assess the discourse referential nature of weak definites. Although the results of these experiments are not conclusive, they still point out towards discourse referential defectiveness.

CHAPTER 4

Modified weak definites

Abstract. Weak definites display restrictions on the modifiers they accept. The goal of this chapter is to determine what adjectives can maintain weak readings and why. The kind-referring analysis defended in this dissertation predicts that only adjectives denoting properties of kinds can occur in weak definite configurations. This prediction is corroborated by the results of two experiments that assessed the acceptability of sloppy readings of different types of modified and unmodified definites in elided VPs.¹

4.1 Introduction

One of the peculiar properties of weak defines is that their weak reading usually disappears if they are modified. This can be observed through the lack of sloppy readings in VP-ellipsis sentences:

- (141) Lola went to #the old hospital/ #the young doctor/ #the small store and Alice did too.
(Lola and Alice must have gone to the same hospital/ doctor/ store.)

Interestingly, not every modifier blocks weak readings:

¹This chapter is based on a paper written in collaboration with Maartje Schulpen (i.e. Aguilar-Guevara and Schulpen, 2014).

- (142) Lola went to the psychiatric hospital/ the alternative doctor/
the organic store and Alice did too.
(Lola and Alice could have gone to different hospitals/ doctors/
stores.)

The main goal of this chapter is to determine what adjectives support weak readings and why. The kind-reference analysis of weak definites outlined in Chapter 3 predicts that adjectives operating at the level of kinds should be the only ones able to occur in weak definite configurations. This chapter presents the results of two experiments that aimed to substantiate this prediction by testing in Dutch the capacity of different types of modified and unmodified definites to trigger sloppy readings in VP-ellipsis sentences. In these experiments the effects of individual-level adjectives was compared to that of so-called *relational adjectives*, which McNally and Boleda (2004) analyze as kind-level adjectives. The main finding of these experiments shows that relational adjectives trigger more sloppy reading acceptance than individual-level adjectives. Interestingly, the experiments also revealed that weak definites modified by relational adjectives trigger less sloppy reading acceptance than unmodified weak definites.

The chapter is organized as follows. Section 4.2 explains the prediction that my analysis of weak definites makes regarding modification. Section 4.3 characterizes relational adjectives and presents the semantics that McNally and Boleda (2004) attribute to them. Section 4.4 reports the experiments. Finally, Section 4.5 provides conclusions.

4.2 A prediction of the kind-reference analysis

As sentence (141) illustrates, some adjectives cannot modify weak definites without causing the loss of weak readings. My analysis of weak definites accounts for this as follows. If weak definites denote kinds, then the NPs heading them must range over kinds as well. Adjectives like *young* are typically analyzed as predicates of individuals (Kamp and Partee, 1995; Partee, 2003, 2010); this means that, when combined with nouns, resulting NPs also denote sets of ordinary individuals. Thus, when the definite article is combined with these modified NPs, it can only select the unique member of a set of ordinary individuals. In this way, the weak reading of the definite is blocked.

This reasoning leads to a prediction: weak readings should not be blocked if the NPs heading the definites are modified by modifiers operating at the level of kinds. In these cases, the adjectives combine with nouns ranging over kinds, and generate NPs that also denote sets of kinds from which the definite article can pick their unique members. An example of this type of adjectives would be *psychiatric*, which, as seen in (142), allows the definite to display sloppy identity. This leads to two questions, namely, what are the semantics of adjectives like *psychiatric* and which other adjectives have that semantics. Both questions will be answered in the coming subsection.

4.3 Kind-level adjectives

In this section I discuss relational adjectives (RAs) and the semantics that McNally and Boleda (2004) (M&B) attribute to them. My interest in these adjectives is twofold. First, most of the modifiers supporting weak readings can be categorized as RAs. Second, the semantics proposed by M&B for RAs is compatible with the prediction of my analysis that only adjectives operating at the level of kinds are able to occur in weak definite configurations.

4.3.1 Relational adjectives

RAs can be defined intuitively as expressions that convey a relationship between the object designated by the noun they modify and another object which can be recovered from the semantics of the adjective (Bally, 1944; Bolinger, 1967; Levi, 1978; Fradin and Kerleroux, 2003; Fábregas, 2007, among others). M&B illustrate this with French *chaleur solaire* ‘solar heat’ (originally from Bally, 1944), in which the heat designated by the noun *chaleur* is related to the sun by the adjective *solaire*. Other examples of RAs are adjectives containing the suffixes *-ic*, *-ary*, *-ar* and *-al* (e.g. *psychiatric*, *ordinary*, *columnar*, *political*) in English and similar ones in Spanish, Dutch, and French. Following Arsenijević et al. (2010) I also consider ethnic adjectives such as *Turkish* to be RAs.

RAs are different from *intersective adjectives* (IAs) such as *male*, *polite* and *dry*, and *subsective adjectives* (SAs) such as *big*, *good* and *young* (Kamp, 1975; Kamp and Partee, 1995). For example, IAs are expressions that attribute properties to the objects designated by the nouns they modify. These adjectives are called *intersective* because they

denote properties that can be modeled as sets of individuals intersecting with the sets of individuals corresponding to the nouns. As a consequence, IAs typically display the entailment pattern illustrated as follows:

- (143) Mario is a male lawyer.
 a. \models Mario is a lawyer.
 b. \models Mario is male.

In contrast to IAs, RAs do not seem to attribute properties to objects and therefore they do not display the same class of entailments:

- (144) Mario is an international lawyer
 a. \models Mario is a lawyer.
 b. $\not\models$ Mario is international.

In addition to this difference, RAs display other peculiarities (most of them also mentioned by M&B), which I will illustrate in Spanish although some of them are also present in other Romance languages, in English, and in Dutch. First, in Spanish, a language that allows adjectives to occur both before and after the noun within an NP (145), RAs can only occur in the latter position (146):

- (145) a. Tengo un pequeño problema.
 'I have a small problem'
 b. Tengo un problema pequeño.
 'I have a small problem'
- (146) a. Marta trabaja en un banco comercial.
 'Martha works in a commercial bank'
 b. *Marta trabaja en un comercial banco.

Second, in Spanish (and Dutch) RAs are acceptable as predicates of copular sentences only if the sentences are embedded in a context invoking a contrast between subclasses.² This contrast can be invoked, for instance, through the presence of a demonstrative determiner in the subject DP

²This generalization is not made explicit by M&B, but is suggested by some examples they provide (in particular, (10a) and (10b)). However, they also accept *el conflicto es político* ('the conflict is political'), which I consider questionable (see also Footnote 4).

(147), the adverb *sólo* ‘only’ (148), a question asking for the subtype to which an object belongs (149), or a clause that overtly establishes a contrast (150):

- (147) a. Este cine es alternativo.
 ‘This movie theatre is alternative’
 b. ?? El cine es alternativo.
- (148) a. El banco es sólo comercial.³
 ‘The bank is only commercial’
 b. ?? El banco es comercial.
- (149) a. ¿Qué tipo de conflicto está aquejando a Nicaragua actualmente?
 ‘What kind of conflict is afflicting Nicaragua?’
 b. El conflicto es político.⁴
 ‘The conflict is political’
- (150) El conflicto es político, no militar.
 ‘The conflict is political, not military’

Third, Spanish RAs (151), in contrast to IAs (152) and to subsecutive adjectives (SAs) (153), can occur in phrases consisting of the noun *tipo* (‘type’) plus an adjective. Notice the correspondence between the lexical meaning of the noun *tipo* and a kind-level semantics for RAs:⁵

³Interestingly, *sólo* turns unacceptable copular sentences with IAs:

- (1) *El banco es sólo nuevo.
 ‘The bank is only new’

⁴Admittedly, in this context the use of an indefinite DP as a predicate would be more appropriate:

- (1) a. ¿Qué tipo de conflicto está aquejando a Nicaragua actualmente?
 ‘What kind of conflict is afflicting Nicaragua?’
 b. El conflicto es un conflicto político.
 ‘The conflict is a political conflict’

⁵*Tipo*-phrases are used in Spanish as modifiers (1a), or embedded in *de* ‘of’ prepositional phrases (1b), or as post-copular predicates (1c) attributing to an individual

- (151) Me compré una falda tipo escocesa.
 ‘I bought a Scottish-type skirt’
- (152) *Me compré una falda tipo verde.
 ‘I bought a green-type skirt’
- (153) *Me compré una falda tipo grande.
 ‘I bought a big-type skirt’

Finally, as also mentioned by M&B, in Spanish RAs must occur in the position closest to the noun when they interact with IAs (154) or SAs (155) to modify the same noun.⁶

- (154) a. Juan se compró un colchón ortopédico blanco.
 ‘Juan bought a white orthopedic mattress.’
 b. ?? Juan se compró un colchón blanco ortopédico
- (155) a. Llegó a España un producto pesquero nuevo.
 ‘A new fish product arrived in Spain’
 b. ?? Llegó a España un producto nuevo pesquero.

Let me now discuss the meaning of RAs according to M&B.

the property of being of the type designated by the adjective. Crucially, *tipo*-phrases are not possible with IAs in any of these contexts (2a)-(2c):

- (1) a. Me compré unas faldas tipo escocesas.
 ‘I bought some Scottish-type skirts’
 b. Una de las religiones oficiales de Dinamarca es el cristianismo de tipo protestante.
 ‘One of Denmark’s official religion is Christianity of the Protestant type.’
 c. El clima en Paraguay es tipo tropical.
 ‘The climate of Paraguay is of the tropical type’
- (2) a. *Me compré una falda tipo verde.
 ‘I bought a green-type skirt’
 b. *Una de las religiones oficiales de Dinamarca es el cristianismo de tipo nuevo.
 ‘One of Denmark’s official religion is Christianity of the new type’
 c. *El clima en Paraguay es tipo impredecible.
 ‘The climate of Paraguay is of the unpredictable type’

A similar contrast occurs in analogous constructions in English and in Dutch.

⁶See Larson (1998) and Cinque (2010) on a similar opposition between what they call individual-level and stage-level modification.

4.3.2 A semantics for RAs

M&B provide an analysis of RAs based on the idea that RAs denote properties of kind individuals. In this sense, RAs differ from IAs and SAs, which the authors consider to have an individual-level semantics. M&B make three assumptions. The first one is that, as (156) represents, all common nouns denote a function with an implicit kind argument (x_k), which is related to the ordinary-individual argument (y_i) typically associated with nouns via Carlson's (1977) realization relation R :⁷

$$(156) \quad [[N]] = \lambda x_k \lambda y_i [R(y_i, x_k) \wedge N(x_k)]$$

The second assumption made by M&B is that, as (157) represents, RAs denote properties of kinds:⁸

⁷Notice that the common noun denotation style adopted by M&B is different from the style I have adopted in Chapter 3. In contrast with M&B, I simply assume that nouns can systematically denote both properties of ordinary individuals and properties of kinds and, to capture the difference, their denotation can have a variable that either ranges over individuals or over kinds (e.g. $\lambda x_k [Newspaper(x_k)]$ vs. $\lambda x_i [Newspaper(x_i)]$). Although I do not see any potential problem with the denotation style adopted by M&B, I do not follow it for the sake of simplicity. I do not see either any problem with adapting to the denotation style I prefer the composition rule proposed by M&B to combine RAs with nouns. This rule is enunciated in (158).

⁸About this denotation let me make a relevant digression. In order to provide a unified account of the different uses of a subset of RAs, namely, ethnic adjectives (EAs) like *French*, Arsenijević et al. (2010) build on M&B's analysis and propose that the meaning of EAs should be like that illustrated in (1a), and the meaning of NPs with EAs like the one illustrated in (1b):

- (1) a. $[[French]] = \lambda P_k \lambda x_k [P_k(x_k) \wedge R(x_k, France)]$
 b. $[[French\ wine]] = \lambda x_k [Wine(x_k) \wedge R(x_k, France)]$

The main difference between this semantics and the one proposed by M&B is a contextually-determined relation R between the kind described by the nominal property (P_k) and the nation associated with the EAs. The idea is that this relation R is an *Origin* relation:

- (2) a. $French(x)$ iff $Origin(x, France)$
 b. $Origin(x, y)$ iff x comes into existence within the spatial domain of y .

Arsenijević et al. propose to generalize these new semantics to all RAs and to assume that the only difference between different types of RAs would be the nature of R . For the purposes of this chapter, the difference between this semantics and that proposed by M&B is not very important. For the sake of simplicity, I adopt M&B's semantics as stated in (157).

$$(157) \quad [[RA]] = \lambda x_k [A(x_k)]$$

The third assumption proposed by M&B is that adjectives denoting properties of kinds are combined with common nouns through the following composition rule:

$$(158) \quad M\&B's \text{ Composition Rule}$$

If a noun N translates as $\lambda x_k \lambda y_i [R(y_i, x_k) \wedge N(x_k)]$ and an adjective phrase AP translates as $\lambda x_k [A(x_k)]$, then $[N \text{ AP}]$ translates as $\lambda x_k \lambda y_i [R(y_i, x_k) \wedge N(x_k) \wedge A(x_k)]$.

(159) shows how the meaning of the NP *psychiatric hospital* would be derived.

$$(159) \quad \begin{array}{ll} \text{a.} & [[hospital]] = \lambda x_k \lambda y_i [R(y_i, x_k) \wedge Hospital(x_k)] \\ \text{b.} & [[psychiatric]] = \lambda x_k [Psychiatric(x_k)] \\ \text{c.} & [[psychiatric hospital]] = \lambda x_k \lambda y_i [R(y_i, x_k) \wedge Hospital(x_k) \wedge \\ & \quad Psychiatric(x_k)] \end{array}$$

Analyzing RAs as properties of kinds accounts for the behavior of RAs summarized in the previous section as follows. First, this analysis treats RAs as being different from IAs, which is what the entailment relations (illustrated in (143)-(144)) and the post-nominal contexts in Romance languages (illustrated in (145)-(146)) reveal. Second, this analysis accounts for the entailment pattern exhibited by RAs (illustrated in (144)), which suggests that these adjectives, in contrast to IAs, do not directly attribute properties to ordinary objects but to the subclasses that these ordinary objects exemplify. Third, the idea that RAs denote properties of kinds is also compatible with the facts that, in Spanish, post-copular RAs are only acceptable if embedded in a context invoking contrasts between subclasses (see examples (147)-(150)), and that only RAs can occur in *tipo*-phrases (see examples (151)-(153)). Finally, the fact that, when a noun is modified both by an RA and an IA, RAs need to be in the closest position to the noun (as (154)-(155) illustrate) makes sense if they denote properties of kinds: otherwise the IA would combine first with the noun, resulting in an NP denoting a property of individuals, which then would no longer be able to combine with the RA.

4.3.2.1 A digression about other potential cases of kind-level modification

I believe that RAs are not the only type of modifiers operating at the level of kinds. For example, nouns modifying other nouns, like in *kitchen table*, *ice-cream server*, and *chocolate cake*, should also be attributed a kind-level semantics.

Other cases that deserve consideration are uses of IAs and SAs in contexts where preestablished types of objects with the property denoted by the adjectives are referred to. Consider the following example:

- (160) *Context:* In some Mexican schools, every Monday a ceremony in honor to the Mexican flag is celebrated before classes start. For that ceremony students have to wear white shoes.

Sentences:

- a. Este lunes traigo zapatos blancos nuevos.
'This Monday I am wearing new white shoes'
- b. ?? Este lunes traigo zapatos nuevos blancos
'This Monday I am wearing white new shoes'

As can be seen, in accordance to what I discussed in Section 4.3.1 about the ordering of RAs with respect to IAs and SAs, only sentence (160a) is acceptable in this particular context. Sentence (160b), which does not have the adjective *white* in the closest position to the noun, is odd. This leads to think that in this case *white* is behaving as a kind-level adjective.

Another interesting case is the Dutch adjective *witte* in *de witte fiets* 'the white bike' used to refer to those white bikes that are for rental in some Dutch cities, which are always white:

- (161) Jan kwam met de witte fiets en Marie ook.
'Jan came by white bike and Marie did too'

In cases like this one, I assume that the adjective *witte* is operating at the level of kinds and that the weak adjective-noun combination *witte fiets* is supported by the concept of white bicycles. This concept is well established within the linguistic community of the cities where the system of white bicycles exist.

Kind-level modifiers like the cases shown in this subsection will not be addressed anymore in this dissertation. However, I find important to cause awareness about their existence.

Returning to RAs, the semantics M&B attribute to these adjectives is consistent with the nature that adjectives occurring in weak definite configurations should have according to my analysis of weak definites. Thus, a natural step is to empirically confirm that RAs indeed allow weak readings. That is what the studies presented in the next section aim to do.

4.4 Testing modification and sloppy readings.

In this section I report on two experiments that were conducted to corroborate the prediction that only kind-level adjectives are able to maintain weak readings. Adopting sloppy readings of definites in VP-ellipsis as the test to detect weak definiteness (see discussion in 2.3.2), the present studies tested the effects of different modification types on the acceptability of sloppy readings of weak and regular definites in Dutch VP-ellipsis sentences. Experiment 1 tested the effects of IAs and SAs, which from now on are called *I-adjectives* as the relevant property they have in common is that they are individual-level adjectives. Experiment 2 tested the effects of RAs, relabeled as *K-adjectives* in accordance to the kind-level semantics attribute to them by M&B.

Before proceeding, let me confirm that weak definites in Dutch behave similarly to how they do in other Indo-European languages such as English, Spanish, German and French. That is to say, they display the properties that Carlson and Sussman (2005) originally described: non-unique reference, sloppy readings in VP-ellipsis sentences, ‘narrow’ scope readings in quantified sentences, lexical restrictions, modification restrictions, discourse referential defectiveness, semantic enrichment, among others. Illustrations of all these properties in Dutch weak definites plus a more detailed report of the experiments presented in this section can be found in Schulpen (2011).

4.4.1 Experiment 1. Testing I-adjectives

4.4.1.1 Materials

In this experiment the interpretation of Dutch VP-ellipsis sentences was tested under four conditions: unmodified weak definites (162), I-modified weak definites (163), unmodified regular definites (164) and I-modified regular definites (165).

- (162) Daan ging naar de supermarkt en Eefje ook.
 ‘Daan went to the supermarket and Eefje did too’
- (163) Daan ging naar de drukke supermarkt en Eefje ook.
 ‘Daan went to the crowded supermarket and Eefje did too’
- (164) Femke ging naar het concert en Inge ook.
 ‘Femke went to the concert and Inge did too’
- (165) Femke ging naar het drukke concert en Inge ook.
 ‘Femke went to the crowded concert and Inge did too’

A set of control items favoring sloppy readings (166) was included in order to counterbalance against a predicted predominance of non-sloppy interpretations in the test conditions.

- (166) Daan ging naar de supermarkt in Londen en Eefje ging naar de supermarkt in New York.
 ‘Daan went to the supermarket in London and Eefje went to the supermarket in New York’

In every item the predicate used was *gaan naar* (‘to go to’). Each item was followed by two different interpretations: the sloppy interpretation, in which each of the two agents went to a different location, and the strict interpretation, in which both agents went to the same location. A complete item would thus look like (167).

- (167) Daan ging naar de supermarkt en Eefje ook.
 ‘Daan went to the supermarket and Eefje did too’
- a. Daan en Eefje gingen allebei naar een verschillende supermarkt.
 ‘Daan and Eefje each went to a different supermarket’
- b. Daan en Eefje gingen allebei naar dezelfde supermarkt.
 ‘Daan and Eefje both went to the same supermarket’

Eighteen weak definites and eighteen regular definites were used, each occurring both in I-modified and in unmodified conditions. Thus, there were seventy-two test items in total. Eighteen different I-adjectives were used, each one paired with one weak definite and with one regular definite. The set of weak and regular definites was established intuitively by verifying that those definites that were supposed to be weak, in contrast

to those that were supposed to be regular, not only seemed to receive sloppy readings in VP-ellipsis sentences, but also displayed the other typical properties of weak definites according to Carlson and Sussman (2005). The entire set of target and filler sentences used in this experiment can be seen in Appendix B.

4.4.1.2 Method

One hundred and twenty two native speakers of Dutch participated in the experiment. They were asked to read each sentence carefully, and then to judge for each of the two interpretations given separately whether it matched the sentence. It was stressed that participants were allowed to accept either only one of the interpretations, both, or neither.

Subjects were randomly assigned to one of six different lists. Each list contained eighteen items: three unmodified weak definites, three unmodified regular definites, three I-modified weak definites, three I-modified regular definites, three weak definite fillers, and three regular definite fillers. Each list occurred in four different orders, so in total there were twenty-four lists. Items were divided quasi-randomly over the six lists, taking care that each definite and each modifier occurred only once in each list. The lists were ordered quasi-randomly as well, adjacent items always being of different conditions.

4.4.1.3 Predictions

Based on Carlson and Sussman (2005), Experiment 1 had two predictions: *Prediction 1*, the acceptance of sloppy readings will be significantly higher in the unmodified weak definite condition than in the unmodified regular definite condition. *Prediction 2*, sloppy readings would be significantly less preferred in the I-modified weak definite condition than in the unmodified weak definite condition. This effect was expected to occur with weak definites but not with regular definites, as sloppy readings are not supposed to be available for regular definites in the first place.

Notice that all these predictions pertained to whether or not the sloppy reading was accepted. With respect to the non-sloppy reading, no differences between weak and regular definites were expected. In fact, the non-sloppy reading should always be available: ceiling effects were predicted in every condition. I will not address non-sloppy reading acceptance results in this chapter.

Weak definite	ASR	Regular definite	ASR
The dentist	.89 (18)	The museum	.73 (26)
The hospital	.75 (20)	The retirement home	.73 (26)
The bike repair shop	.72 (18)	The bar	.52 (21)
The supermarket	.72 (18)	The studio	.46 (26)
The snack bar	.71 (21)	The factory	.45 (20)
The drugstore	.70 (20)	The restaurant	.42 (19)
The movie theatre	.69 (26)	The convent	.40 (20)
The bank	.68 (19)	The bowling alley	.39 (18)
The court	.68 (19)	The hotel	.29 (21)
The forest	.67 (21)	The farm	.28 (18)
The sauna	.67 (21)	The showroom	.28 (18)
The library	.65 (20)	The school	.17 (18)
The beach	.65 (26)	The soccer field	.17 (18)
The train station	.63 (19)	The concert	.16 (19)
The gym	.56 (18)	The estate	.16 (19)
The university	.56 (18)	The monument	.14 (21)
The airport	.54 (26)	The castle	.11 (18)
The swimming pool	.44 (18)	The lake	.10 (20)
Overall	.66 (366)		.35 (366)

TABLE 4.1: Complete list of the weak definite and regular definite items, with ASR means and number of observations (in parenthesis) per item in the unmodified condition.

4.4.1.4 Analysis and item selection

For each item, subjects' answers were given an *acceptance of sloppy reading* (ASR) score of 1 if they accepted the sloppy reading, and 0 if they did not accept the sloppy reading.

What was surprising in the results was that the ASR means of the items in the unmodified condition covered almost the whole range from 0.1 to 0.9. That is, there were also quite some items with ASR means around .50. This made it impossible to determine whether they should be considered weak or regular definites based on the results (see Table 4.1). For that reason, only the twelve items with the highest ASR means (i.e., the twelve best weak definites) and the twelve items with the lowest ASR means (i.e. the best regular definites) were selected. These two

sets were used for further analysis and for Experiment 2. Two of the selected items, *the retirement home* and *the museum*, were originally classified as regular definites, yet turned out to behave as weak definites and were therefore reclassified as such. In order to avoid circularity in the data analysis, the original dataset (the one prior to selection and reclassification of items) was used to test whether there was an effect of Type of Definite in the non-modification condition.⁹ Two models of the original dataset were compared using a logistic mixed effects regression with ASR as the dependent variable and Subject and Item as the random factors. M0 contained no fixed factors, and M1 contained Type of Definite as a fixed factor. A chi square analysis on the log Likelihood values of the models (-402.74 and -388.49 respectively) showed that M1 was a significantly better fit ($\chi^2(1)=27.951$, $p<.0001$). Thus, in the non-modification condition weak definites had significantly higher ASRs than regular definites ($\beta=-2.5880$, $SE=0.4047$, $p<.0001$). For the rest of the analyses and discussion see Section 4.4.2.4.

4.4.2 Experiment 2. Testing K-adjectives

4.4.2.1 Materials

The test items used in Experiment 2 consisted of the twelve weak definites and the twelve regular definites selected for further analysis.¹⁰ Again, these items were presented in VP-ellipsis sentences. Whereas in Experiment 1 there were two independent variables (Type of Definite and Modification), in the current experiment the only independent variable was Type of Definite as all test items contained K-modification. In Experiment 1, each I-modifier was paired both with a weak definite and a regular definite. However, it was not possible to find K-modifiers that could similarly form a plausible combination with both a weak definite and a regular definite. Thus, in Experiment 2 each definite had its own K-modifier.

The following example illustrates the items used in this experiment. Again, the two interpretations that were given for each sentence were the sloppy (168a) and the strict (168b) reading.

⁹All analyses were conducted with the R software program (R Development Core Team, 2008), using the lme4 (Bates et al., 2012) and languageR (Baayen, 2011) packages.

¹⁰One substitution was made: *the sauna*, which had an ASR mean of .67, was used instead of *de fietsenmaker* ('the bike repair shop'), which had an ASR of .72, since it was not possible to find any subkinds of the latter.

- (168) Daan ging naar de aziatische supermarkt en Eefje ook.
 ‘Daan went to the Asian supermarket and Eefje did too’
- a. Daan en Eefje gingen allebei naar een verschillende supermarkt.
 ‘Daan and Eefje each went to a different supermarket’
 - b. Daan en Eefje gingen allebei naar dezelfde supermarkt.
 ‘Daan and Eefje both went to the same supermarket’

The only other difference between Experiment 1 and Experiment 2 had to do with the types of fillers that were included. As in Experiment 1 a predominance of accepted sloppy readings was predicted, only fillers forcing strict readings were used. Experiment 2 expected sloppy readings to be accepted for exactly half of the items (that is, for weak definite items, but not for regular definite items). Therefore, twelve of the fillers were the same as the ones used in Experiment 1, which forced a sloppy reading. In order to balance the design, the other twelve fillers used in Experiment 2 contained definites (either weak or regular) modified by an I-level adjective (169), which forced a strict reading.

- (169) Jenny ging naar de drukke haven en Egbert ook.
 ‘Jenny went to the busy harbor and Egbert did too’

Participants were randomly assigned to one of two lists, each list occurring in four different orders and containing twenty-four items: six items containing K-modified weak definites, six items containing K-modified regular definites, six fillers forcing the sloppy reading, and six fillers containing I-modification. Again, items occurred in quasi-randomized order so that no more than two items of the same condition occurred adjacently. The entire set of target and filler sentences used in this experiment can be seen in Appendix B.

4.4.2.2 Method

Forty-one Dutch native speakers participated in this experiment. They were given the same instructions as the participants of the previous experiment.

4.4.2.3 Predictions

The prediction of Experiment 2, *Prediction 3*, is that the sloppy reading of K-modified weak definites was going to be significantly more accepted

than that of I-modified weak definites. On the other hand, given that regular definites were not expected to allow sloppy readings in the first place, no effect of K-modification on these readings was expected. Thus, for both weak definites and regular definites, it was predicted that the ASR in the K-modified condition would not differ significantly from that in the unmodified condition.

4.4.2.4 Results

Tables 4.2 and 4.3 (displayed until the end of the chapter for convenience) show an overview of the ASR means of the weak definites and regular definites respectively in the unmodified, K-modified, and I-modified conditions.¹¹ Figure 4.1 summarizes all these results graphically.

The results of both experiments were modeled using a mixed effects logistic regression analysis. The dependent variable was ASR.¹² Four different models were compared with baseline model M1, which contained no fixed factors. M2 contained the fixed factor Type of Definite, M3 contained the fixed factor Modification, M4 contained both Type of Definite and Modification, and M5 contained Type of Definite, Modification and the interaction between Type of Definite and Modification. Since Subject and Item were crossed factors in the design of both experiments, these were included as random factors in all five models. A chi square analysis showed that each of the models was significantly better than the previous one. M5 had the lowest log likelihood value, indicating that this model was the best fit. See Table 4.4 for an overview of the model comparisons. Tables 4.5, 4.6 and 4.7 present the details of M5 (all these tables are

¹¹For the sake of simplicity and space, these tables only show English translations of the Dutch definites originally used in the experiments.

¹²A potential problem in the analysis is that not every Modification condition was tested in the same experiment: Experiment 1 tested unmodified items and I-modified items, and Experiment 2 tested K-modified items. In other words, there was collinearity between the variables Experiment and Modification, which means that the differences I would like to attribute to a difference in Modification might also be caused by differences in Experiment. However, throughout the two experiments, the instructions participants received and the structure and presentation of the items were the same. Furthermore, having Subject as one of the random factors allows to control for between-subject variation. The only further difference between the two experiments was that in Experiment 2 half of the fillers forced the strict reading. This was done in order to balance the design for predicted ASR, as mentioned in Section 4.4.2.1. All in all, I feel reasonably confident that any possible difference can be attributed to the difference in Modification rather than to the difference in Experiment.

(I-mod/K-mod) Weak Def	ASR non-mod	ASR K-mod	ASR I-mod
The (trendy/cosmetic) dentist	.89 (18)	.79 (19)	.10 (20)
The (new/psychiatric) hospital	.75 (20)	.53 (19)	.17 (18)
The (cozy/protestant) retirement home	.73 (26)	.41 (22)	.15 (20)
The (crowded/archeological) museum	.73 (26)	.18 (22)	.05 (19)
The (busy/Asian) supermarket	.72 (18)	.74 (19)	.25 (20)
The (cozy/Turkish) snack bar	.71 (21)	.53 (19)	.16 (19)
The (dusty/public) drugstore	.70 (20)	.45 (22)	.11 (18)
The (crowded/alternative) movie theatre	.69 (26)	.42 (19)	.10 (21)
The (posh/commercial) bank	.68 (19)	.50 (22)	.12 (26)
The (stained/provincial) court	.68 (19)	.58 (19)	.04 (26)
The (narrow/tropical) forest	.67 (21)	.27 (22)	.05 (19)
The (dirty/Finnish) sauna	.67 (21)	.45 (22)	.05 (19)
Overall	.72 (255)	.48 (245)	.11 (246)

TABLE 4.2: ASR means and number of observations (in parenthesis) per item of the weak definites in the three conditions: unmodified, K-modified, and I-modified.

displayed at the end of the chapter for convenience).

Section 4.4.1.4 already showed that Prediction 1 was confirmed: in the non-modification condition the sloppy reading was accepted significantly more often for weak definites than for regular definites ($\beta=-3.7458$, $SE=.4307$, $p<.0001$). Prediction 2 was also confirmed: sloppy readings were accepted significantly more often for unmodified weak definites than for I-modified weak definites ($\beta=-5.1168$, $SE=.3829$, $p<.0001$). In fact, I-modification almost completely blocked the availability of the sloppy reading of weak definites, and the difference between weak definites and regular definites found in the non-modification condition was no longer there in the I-modification condition ($\beta=-0.9078$, $SE=.5274$, $p=.0852$). It must be noted that, contrary to the expectations, a similar effect of I-modification on regular definites was found ($\beta=-2.2787$, $SE=.4342$, $p<.0001$). This was due to unexpectedly high overall ASR means of unmodified regular definites.

Prediction 3 was confirmed as well: the sloppy reading was accepted significantly more often for weak definites in the K-modification condition than for weak definites in the I-modification condition ($\beta=3.1763$,

(I-mod/K-mod) Reg Def	ASR non-mod	ASR K-mod	ASR I-mod
The (old/Benedictine) convent	.40 (20)	.47 (19)	.17 (18)
The (popular/American) bowling alley	.39 (18)	.27 (22)	.00 (18)
The (posh/all-inclusive) hotel	.29 (21)	.21 (19)	.11 (19)
The (dusty/organic) farm	.28 (18)	.36 (22)	.00 (18)
The (small/Italian) showroom	.28 (18)	.21 (19)	.08 (26)
The (dirty/catholic) school	.17 (18)	.74 (19)	.06 (18)
The (narrow/communal) soccer field	.17 (18)	.32 (22)	.04 (26)
The (busy/classical) concert	.16 (19)	.05 (19)	.10 (21)
The (large/18th century) estate	.16 (19)	.05 (19)	.04 (26)
The (stained/17th century) monument	.14 (21)	.05 (22)	.05 (20)
The (beautiful/medieval) castle	.11 (18)	.18 (22)	.10 (21)
The (vast/artificial) lake	.10 (20)	.05 (22)	.00 (18)
Overall	.22 (228)	.20 (250)	.06 (245)

TABLE 4.3: ASR means and number of observations (in parenthesis) per item of the regular definites in the three conditions: unmodified, K-modified, and I-modified.

SE=.5079, $p < .0001$). Again somewhat unexpected, a similar difference between K-modification and I-modification was found for the regular definites ($\beta = -2.0780$, SE=.5690, $p = .0003$). Again this was due to unexpectedly high overall ASR means of regular definites in the K-modification condition. However, in the K-modification condition the sloppy reading was still accepted significantly more often for weak definites than for regular definites ($\beta = -2.0061$, SE=.3766, $p < .0001$).

The most important unexpected finding was that, in the case of the weak definites, the acceptability of the sloppy reading in the K-modification condition turned out to be significantly lower than in the unmodified condition ($\beta = -1.9405$, SE=.4543, $p < .0001$). No such effect occurred in the case of regular definites ($\beta = -0.2007$, SE=.4889, $p = .6814$), which was as expected.

In order to test whether there was a habituation effect on subjects' responses, for each of the six lists used in Experiment 1 and the two lists used in Experiment 2 it was tested whether there was an effect of list order (recall that each list occurred in four different orders). A logistic mixed effects regression was used to create two models for each list: one

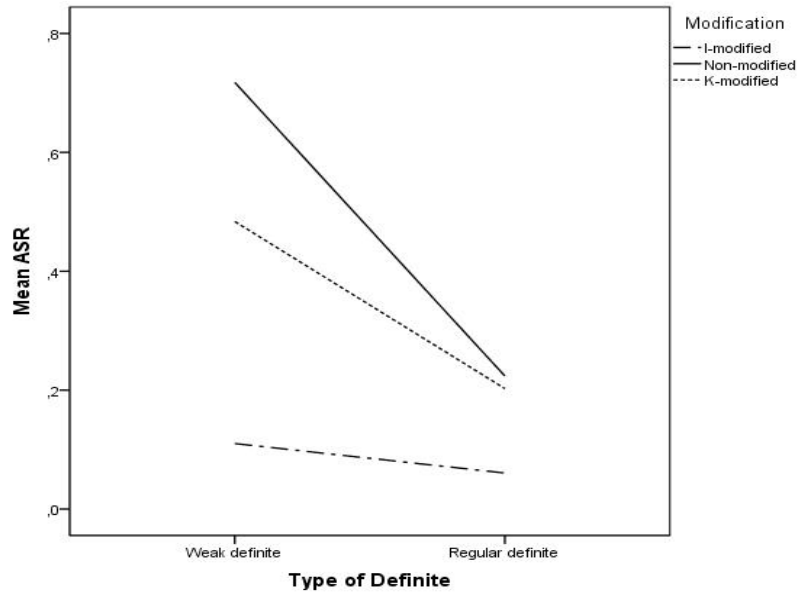


FIGURE 4.1: ASR means of regular and weak definites in three conditions: unmodified, I-modified and K-modified.

without any fixed effects (M0) and one with List Order as the fixed factor. In each model ASR was the dependent variable and Subject and Item were random factors. Chi square analyses on the log Likelihood values for the two models showed that there was no effect of List Order for any of the lists (see Table 4.8, also presented at the end of the chapter).

4.4.3 General discussion

Experiments 1 and 2 tested three main predictions. *Prediction 1*: Higher ASR for unmodified weak definites than for unmodified regular definites. *Prediction 2*: Higher ASR for unmodified weak definites than for I-modified weak definites. *Prediction 3*: Higher ASR for K-modified weak definites than for I-modified weak definites. Predictions 1 and 2 were confirmed by the results of Experiment 1. Likewise, the comparison between the results of Experiment 1 and those of Experiment 2 showed that Prediction 3 holds.

A puzzling result were the unexpectedly high overall ASR means of

the unmodified and K-modified regular definites. In these two conditions there were rather high differences between the ASR means of different items. As mentioned in Section 4.4.1.4, the results of unmodified weak and regular definites cover almost the whole range between 0.1 and 0.9. To a lesser degree the same holds for the results in the K-modification condition. From these results it can be concluded that the difference between weak and regular definites is gradual rather than absolute. To corroborate this graduality, another version of the experiment should be carried out, this time asking for graded judgments.

Another aspect of the results which deserves discussion here is the fact that three different effects of K-modification were observed in Experiment 2: (i) on weak definites, there was a significant decrease of ASR with respect to the unmodified condition; (ii) on regular definites, there was a null effect on ASR; (iii) on the regular definite *the catholic school*, there was a significant increase of ASR. Each of these findings will be addressed in turn.

Following my analysis of weak definites, the first observation is surprising as there is no reason to expect any difference between unmodified and K-modified weak definites. There is one possible explanation for this observation, which I only sketch here. In line with my analysis, the association of SUs with the kinds referred to by K-modified weak definites is less widespread among speakers than the association of SUs with the kinds referred to by unmodified weak definites. Recall that this association is a necessary condition to generate the weak reading causing the sloppy interpretation of the definites. Therefore, assuming that not every speaker accepts the association of SUs with every K-modified weak definite, and, after all, a definite can always be interpreted specifically if there are no conditions for the emergence of its weak reading, then it makes sense that the sloppy reading is accepted less often with K-modified weak definites. This explanation, although plausible, requires more experimental support determining to what extent SUs associated with K-modified weak definites are less widespread than those associated with unmodified weak definites. Crucially, this explanation also requires an answer to other fundamental questions such as whether the NPs heading modified weak definites are the result of a regular compositional process or rather they are stored as chunks in the lexicon of the speakers. I will address these questions in more detail in Chapter 5, Section 5.5.2.1.

As for the null effect of K-modification on the ASR of regular definites, recall that, in my analysis, the requirements for weak definiteness are

(i) kind-reference and (ii) association with SUs. Thus, even though K-modification of a regular definite may support kind-reference, the definite cannot be interpreted weakly because the kind the modified definite is supposed to refer to is not associated with any SU. As a consequence, the weak reading is predicted to be unavailable.

Finally, let me discuss the case of the items with the noun *school*. These items showed average, regular definite ASR means in the unmodified and I-modified conditions, but an unexpectedly high ASR mean (of .74) in the K-modification condition. In fact, this ASR mean almost equals the highest ASR mean scored by an unmodified weak definite (see Table 4.3). In order to account for this behavior, it is relevant to first note that *school*, unlike the nouns used in the other regular definite items, can occur as a bare singular in Dutch (e.g. *naar school gaan*, ‘to go to school’). The behavior of *the school* can be explained in terms of competition between bare and definite forms, along the lines of de Swart and Zwarts (2009). These authors propose an analysis based on this idea in order to explain why bare nominals, unlike their non-bare counterparts, come with stereotypical interpretations. They follow Horn’s (1984) principle of division of labor, which states that unmarked forms come with unmarked meanings, and marked forms come with marked meanings. Accordingly, the bare construction *in jail* (170) is analyzed by de Swart and Zwarts as unmarked with respect to *in the jail* (171), which contains more structure: a definite article. The unmarked form carries the meaning ‘being imprisoned’, which is assumed to be unmarked with respect to the meaning ‘(just) visiting the prison’, carried by the marked form, because to be imprisoned is the stereotypical way of being in a jail:

(170) John is in jail. (= John is imprisoned)

(171) John is in the jail. (= John is visiting a prison)

Similarly to cases like *in jail*, the Dutch construction *naar school gaan* (‘to go to school’) expresses a stereotypicality meaning, namely, ‘to go to study’. As a consequence of the division of pragmatic labor, this reading does not arise with its counterpart *naar de school gaan*, which only means ‘to go to a school’, and the unmodified definite *the school* behaves like a regular definite. Because bare nominals in Dutch are very restricted in the modification they allow, the construction *naar katholieke school gaan* (‘to go to catholic school’) is ungrammatical. This means that the construction with the K-modified definite *naar de katholieke school gaan* has no longer

a competitor that can carry more optimally the stereotypical, unmarked reading ‘to go to study in a catholic way’. Therefore, *naar de katholieke school gaan* can carry it, and *de katholieke school* behave as a proper weak definite displaying sloppy readings in VP-ellipsis.

The explanation of the behavior of items with the noun *school* should be seen as a general prediction for definites that have a bare singular counterpart: in unmodified form, such definites will behave as regular definites because they have a counterpart bare singular form carrying the stereotypical meaning typically attributed to weak definites. In contrast, when modified by kind-level adjectives, these definites will display a weak definite behavior, which will no longer be blocked by any bare counterpart. This prediction is consistent with the fact that, across languages, there is also a division of labor between weak definites and bare singulars. For example, in English the stereotypical reading ‘to be incarcerated’ is expressed by the bare singular *to be in prison*, whereas in Dutch a weak definite (*in de gevangenis zitten*) is used. I leave the testing of this prediction for future research.

4.5 Conclusions

The aim of this chapter was to investigate the nature of adjectives acceptable in weak definite constructions. In the first part, I formulated the prediction that only adjectives that operate at the level of kinds can occur in weak definite configurations, which is in accordance with my analysis of theses constructions. In the second part of the chapter, I characterized RAs and adopted the semantics that M&B attribute to them. The empirical motivation to use their work was that most of the adjectives not blocking weak readings are RAs. The theoretical motivation is that the semantics that M&B propose involves predication over kinds, which is consistent with the prediction I just mentioned. In the third part of the chapter, I presented two experiments aimed to corroborate this prediction, testing the effects of RAs (renamed as K-adjectives) compared to IAs and SAs (both renamed as I-adjectives), on the availability of the sloppy interpretation of weak and regular definites occurring in VP-ellipsis sentences. The main finding of these experiments is that, indeed, K-adjectives are more acceptable in weak definite constructions than I-adjectives.

Now that I have provided empirical evidence in favor of the main

premise of my analysis of weak definites, that weak definites refer to kinds, I can proceed to motivate other aspects of the theory. In the next chapter I motivate the association of kinds with stereotypical usages, which, as shown through the previous and the present chapter, plays a crucial role on the emergence of weak readings. To do so, I will explore the lexical meaning of weak nouns and predicates. In that chapter, in Section 5.5.2.1, I will also return to modified weak definites and discuss their compositionality in light of my findings about the meaning of weak nouns.

Model	Fixed factor(s)	Random factors	Log likelihood	χ^2	p-value
M1	-	Subject + Item	-753.50	-	-
M2	Definite	Subject + Item	-738.06	30.863	<.0001
M3	Modification	Subject + Item	-607.97	260.180	<.0001
M4	Definite + Modification	Subject + Item	-594.79	26.378	<.0001
M5	Definite + Modification + Definite*Modification	Subject + Item	-579.76	30.054	<.0001

TABLE 4.4: Overview of model comparisons. The Log likelihood value of each model was compared to that of the model preceding it.

Type of definite	Comparison	β -estimate	SE	p-value
Weak	unmodified vs. I-modified	-5.1168	0.3829	<.0001
	unmodified vs. K-modified	-1.9405	0.4543	<.0001
	I-modified vs. K-modified	3.1763	0.5079	<.0001
Regular	unmodified vs. I-modified	-2.2787	0.4342	<.0001
	unmodified vs. K-modified	-0.2007	0.4889	.6814
	I-modified vs. K-modified	2.0780	0.5690	.0003

TABLE 4.5: Overview of comparisons between the different types of modification per type of definite in model M5.

Type of modification	Comparison	β -estimate	SE	p-value
unmodified	Weak Defs. vs. Regular Defs.	-3.7458	0.4307	<.0001
I-modified	Weak Defs. vs. Regular Defs.	-0.9078	0.5274	.0852
K-modified	Weak Defs. vs. Regular Defs.	-2.0061	0.3766	<.0001

TABLE 4.6: Overview of the difference between weak definites and regular definites per type of modification in model M5.

Interaction	β -estimate	SE	p-value
Weak Defs vs. Regular Defs * Non-mod vs. I-mod	2.8382	0.5575	<.0001
Weak Defs vs. Regular Defs * Non-mod vs. K-mod	1.7398	0.4174	<.0001
Weak Defs vs. Regular Defs * I-mod vs. K-mod	-1.0985	0.5165	.0334

TABLE 4.7: Overview of interaction effects in model M5.

List	Log likelihood M0	Log likelihood M1	Df	χ^2	p-value
1	-74.178	-73.265	1	1.8254	.1767
2	-66.905	-66.853	1	0.1036	.7475
3	-45.173	-44.208	1	1.9308	.1647
4	-43.403	-42.822	1	1.1614	.2812
5	-74.805	-74.734	1	0.1424	.706
6	-85.138	-85.138	1	0.0	.9972
7	-129.57	-128.34	1	2.4746	.1157
8	-111.13	-110.93	1	0.4074	.5233

TABLE 4.8: Comparison per list between the model without fixed effects (M0) and the model with List Order as fixed effect (M1).

CHAPTER 5

Weak nouns, weak verbs and stereotypicality

Abstract. The range of nouns heading weak definites is limited. The same happens with the verbs that can govern them. My account of weak definites attributes these limitations to the absence of any of two circumstances, namely, that the definites refer to kinds associated with stereotypical usages, and that the set of events corresponding to these usages do not intersect the set of events corresponding to the verbs. The present chapter studies the lexical meaning of nouns and verbs occurring in weak definites configurations in order to substantiate this explanation.

5.1 Introduction

Weak definite constructions display lexical restrictions. On the one hand, as the following VP-ellipsis sentences show, not every noun can occur in a weak definite:

- (172) a. Martha listened to the radio and Alice did too.
b. Martha listened to #the walkie-talkie and Alice did too.
- (173) a. Martha took the bus and Alice did too.
b. Martha took #the boat and Alice did too.

On the other hand, the range of verbs and verb-preposition combinations that trigger weak definites is also limited:

- (174) a. Martha listened to the radio and Alice did too.
 b. Martha fixed #the radio and Alice did too.
- (175) a. Martha took the bus and Alice did too.
 b. Martha drove #the bus and Alice did too.

The analysis of weak definites I propose in this dissertation, relates the restrictions illustrated above to stereotypical usages (SUs). According to this theory, in order for a VP consisting of a verb plus a definite to trigger weak definiteness, two conditions must be fulfilled: i) the kind the definite refers to is associated with SUs, and ii) the set of events corresponding to the verb overlaps with the set corresponding to the SUs. When any of these two conditions is absent, then no weak definite reading is triggered. The absence of the first condition explains what happens in (172b)-(173b), that is, the kinds the definites *the walkie-talkie* and *the boat* refer to are not associated with SUs. The absence of the second condition explains (174b)-(175b), that is, the set of events corresponding to the verbs *to fix* and *to drive* would not be intersecting with the set corresponding to the SUs associated with the kinds referred to by the definites *the radio* and *the bus*.

In the present chapter, I examine in more detail the lexical meaning of the nouns heading weak definites (*weak nouns*) and the verbs and verb-preposition combinations governing them (*weak verbs*). My aim is to identify a common feature to all the members of each category in order to better understand the lexical restrictions illustrated above, and thus motivate better the conditions of emergence of weak definite readings proposed in my analysis.

The main conclusion of this examination regarding weak nouns is that they designate functional objects used in stereotypical ways. The main conclusion regarding weak verbs is that they designate activities supporting these stereotypes.¹ These conclusions substantiate the emergence conditions of weak definite readings proposed in my analysis. These conditions also lead to two more conclusions. One conclusion notes that, given that weak verbs are derived from regular verbs by means of a lexical rule, it is not necessary to treat them as a class of words stipulated in the

¹Throughout this dissertation I use the word *activity* to simply mean ‘the process of doing something’, which informally speaking is what I assume to be what every verb (or at least every weak verb) designates. Only in one mention, in Section 5.3, *activity* refers to a type of eventuality according to Vendler’s (1957) classification of verbal lexical aspect.

lexicon. The other conclusion is that, in contrast, weak nouns constitute a class of nouns marked as such in the lexicon.

The present chapter is organized as follows. Section 5.2 identifies the common feature to all weak nouns. Section 5.3 identifies the same for weak verbs. Section 5.4 discusses the effects of stereotypicality on the emergence of weak readings. Based on the previous discussions and findings, Section 5.5 discusses the question whether weak nouns and verbs constitute well-determined lexical classes. As the answer is affirmative for weak nouns, Section 5.6 proposes a tentative way to represent the lexical meaning of the nouns. To do so, some basic notions of Pustejovsky's (1991) Generative Lexicon Theory are used. Finally, Section 5.7 summarizes the main claims.

5.2 Weak Nouns

5.2.1 Weak nouns are functional nouns

The set of nouns occurring in weak definites is restricted and heterogeneous. However, it is still possible to classify them according to the type of object they designate. Weak nouns designate musical instruments, means of transport, communication devices, natural places, establishments, home spaces, professions, machines, and a few other things that are difficult to categorize. Notice that a classification in these terms is merely intuitive and it does not presuppose any formal distinction between the nouns. The following examples illustrate each of these groups.

(176) *Musical instruments*

- a. Romeo Penque also played **the oboe** on Roland Kirk's 1975 album *Return of the 5000 Lb.*
- b. Chet Baker sang as a child, and continued to do so even after he had become famous on **the trumpet**.

(177) *Communication devices*

- a. When was the last time you listened to **the radio**?
- b. Shhhhhhhhh! I'm on **the phone**!

(178) *Means of transport*

- a. Martha is so apprehensive. This morning she went out and waited for **the bus** 20 minutes before the stop time.

- b. It's ok, we caught **the train** anyway.

(179) *Establishments*

- a. Martha thinks that I have money in **the bank**.
- b. Charlie was in **the hospital** from Monday to Thursday, but is now home feeling a little better.

(180) *Home spaces*

- a. Roll up your sleeves and spend two hours in **the kitchen** with Michael and Susan Maddox in a hands-on cooking class.
- b. I ran to **the bathroom** and made it just in time.

(181) *Machines*

- a. I ran on **the treadmill** today instead of just working out on **the elliptical**. I burned like 120 calories.
- b. Did you hand wash the dishes before using **the dishwasher**?

(182) *Professions*

- a. My wife called **the doctor**, and we scheduled an appointment for the following week.
- b. Daddy, next time bring **the plumber**!

(183) *Natural places*

- a. My cousin Luisa's boyfriend proposed to her while they were biking in **the mountains**.
- b. I want to sleep on **the beach** before I die a boring death.

(184) *Other cases*

- a. At night, I open **the window** and ask the moon to come and press its face against mine.
- b. Did you hand wash **the dishes** before using the dishwasher?

Given the diversity illustrated by the examples above, the question then is whether there is any attribute that all weak nouns have in common. I propose that this is the case. I propose that, as the categories of musical instruments, means of transport, communication devices, establishments, and machines clearly exemplify, this attribute is that weak nouns designate objects assigned with or created with specific functions. For example, the function of musical instruments is to produce sounds, the function of means of transport is to transport individuals, the function of machines is to execute specific tasks such as washing dishes (in the case of a

dishwasher), the function of establishments is to provide specific services such as financial services (in the case of a bank), etc. In other words, weak nouns are functional nouns.²

There are some apparent exceptions to this functional nature. One is the case of nouns corresponding to professions. These nouns have humans as referents (e.g. *doctor* designates persons qualified in medicine) and as such they would not seem to be functional nouns. However, I follow de Swart et al. (2007) who treat these nouns as part of a greater group of nouns which designate capacities. Capacities are specific roles in society attributed to individuals. For instance, the role of the doctor capacity is to provide medical services. In this sense, names of professions are functional nouns just like names of musical instruments and establishments are.

Another potential counterexample to the functional nature of weak nouns is the case of nouns referring to natural places such as *the mountains* (183) or *the beach* (184). In principle, these kinds of objects do not have a function as such. However, natural objects can sometimes be associated with functions by convention. For example, mountains and beaches are attributed with the function of providing people specific recreational environments where specific activities can take place (e.g. skiing or hiking, in the case of mountains, and swimming or sunbathing in the case of beaches).

The above discussion can be summarized in the following generalization:

Generalization 1. *Weak nouns designate objects with a characteristic function in society for use by human beings.*

This generalization accurately covers each weak noun presented above. However it is a loose generalization. In the next section I explain why.

²Notice that the notion of functional nouns I am discussing here is not the same one discussed by authors like Löbner (1985, 2012) and Partee and Borschev (2012). For these authors, functional nouns are words like *mother*, *center*, *height*, *address*, *price*, *temperature*, and *nationality*, which designate objects that by definition have a functional relation with another object (e.g. a mother is an individual with the function of being the female progenitor of an individual, just like a height is always the height of an object like a column, an address is the address of something like a building, etc.). For Löbner, it is also crucial that a functional noun designates an object that is unique with respect to the relation it holds with another object (i.e. a son only has one mother, a column only has one height, a building only has one address, etc.)

5.2.2 Not every functional noun is a weak noun

Generalization 1 accurately covers every weak noun. However, this generalization overgenerates. Not every name of a functional object can be a weak noun. Furthermore, except for the names of musical instruments, which occur productively in weak definites (see Claessen, 2011), not every noun belonging to the noun classes listed above trigger weak readings. Consider the following examples:

- (185) *Communication devices*
Martha listened to #**the tape recorder**/#**the walkie-talkie** and Alice did too.
- (186) *Means of transport*
Martha took #**the taxi**/#**the boat** and Alice did too.
- (187) *Natural places*
Martha went to #**the lake**/#**the hills** and Alice did too.
- (188) *Establishments*
Martha is in #**the hotel**/#**the restaurant** and Alice is too.
- (189) *Home spaces*
Martha spent two hours in #**the corridor**/#**the roof** and Alice did too.
- (190) *Professions*
Martha called #**the policeman**/#**the secretary** and Alice did too.

Furthermore, although many weak nouns seem fairly constant across languages and dialects (e.g. *bus*, *newspaper*, *doctor*), some others are not. For instance, Standard Dutch speakers accept the weak reading of the *de fiets* ‘the bike’ easily whereas Mexican Spanish speakers do not. Likewise, *la clínica* ‘the clinic’ is a weak definite in Mexican Spanish but not in American English.

Thus, given that the difference between the functional nouns that can and cannot occur in weak definites does not seem to reflect any deep conceptual distinction or at least any apparent consistency, the question then is whether this difference is simply arbitrary or we can still identify a common feature to all functional nouns which is responsible for the triggering of weak readings. In Section 5.4 I answer this question affirmatively by discussing the role of stereotypicality in the emergence of

weak definite readings. Before that, let me discuss the meaning of weak verbs.

5.3 Weak verbs

This section examines verbs combining with weak definites in order to identify their characterizing property. Two facts complicate this inspection. First, although several verbs can combine with the same weak definite, the range is still limited and varies from weak definite to weak definite. Sentences *a* and *b* of each of the examples in (191)-(198) show, respectively, verbs that trigger and that do not trigger weak readings.

- (191) a. Martha **listened to/paid attention to/heard a song on/turned on** the radio and Alice did too.
 b. Martha **fixed/gave away** #the radio and Alice did too.
- (192) a. Martha **took/rode/waited for** the bus and Alice did too.
 b. Martha **washed/drove** #the bus and Alice did too.
- (193) a. Martha **went to/drove to/ spent the weekend on** the beach and Alice did too.
 b. Martha **saw/left** #the beach and Alice did too.
- (194) a. Martha is **in/walked to/left** the hospital and Alice is/did too.
 b. Martha **is behind/demolished** #the hospital and Alice is too.
- (195) a. Martha **spent two hours in** the kitchen and Alice did too.
 b. Martha **painted** #the kitchen and Alice did too.
- (196) a. Martha **called/consulted/took advice from/visited** the doctor and Alice did too.
 b. Martha **insulted/sued** #the doctor and Alice did too.
- (197) a. Martha **opened/closed** the window and Alice did too.
 b. Martha **broke/fixed** #the window and Alice did too.
- (198) a. Martha **read/had a look at/looked through** the newspaper and Alice did too.
 b. Martha **threw away/lost** #the newspaper and Alice did too.

A second problem to identify a characterizing property of weak verbs is that any attempt to classify weak verbs, for instance, in terms of verb classes (in the sense of Levin (1993)) or aktionsart (in the sense of Vendler (1957)), seems to be irrelevant. Just in the examples above, each verb belongs to a different class (e.g. *to go* is a verb of motion, *to take* is a verb of removing, *to call* is a verb of communication, etc.). Likewise, all the aspectual categories are covered by these verbs (e.g. *to listen* designates an activity, *to be in* designates an state, *to leave* designates an achievement, and *to open* designates an accomplishment).

These two observations could be considered as indications that weak verbs, in contrast to weak nouns, do not have anything in common. However, I show throughout the rest of this section that such a conclusion would not be accurate.

5.3.1 Two classes of weak verbs

To pursue a more exhaustive examination of weak verbs, I first need to classify them in two groups according to the extent their meaning is specified. One group comprises verbs like *to open*, *to read* or *to listen* (in *to open the window*, *to read the newspaper* and *to listen to the radio*, respectively), which are verbs displaying restrictions on the type of object their internal argument can designate. For example, *to read* requires its direct argument to designate an object with a text, a script, or a code written. Likewise, *to open* requires its argument to refer to an object with an aperture.

A second group of weak verbs is constituted by examples like *to go*, *to leave*, or *to take* (in *to go to the doctor*, *to leave the hospital* and *to take the bus*, respectively), which are less selective. At this point it is relevant to make a digression regarding this group. Some of these verbs, like *to take* in constructions like *to take a nap* or *to take a shower*, are commonly referred in the literature as *lights verbs* (Jespersen, 1949). Broadly speaking, a light verb is a verb that creates a complex predication together with the NP it governs. In this predication the verb does not contribute with its etymological meaning. Instead, its function is enable the NP to provide its own meaning. For example, the meaning of *to take a shower* is not ‘to take’ a shower literally but rather ‘to shower’. The phenomenon of light verbs is rather complex and comprises several types of constructions (see Grimshaw and Mester, 1988; Cattell, 1984; Sells, 1989; Di Sciullo and Rosen, 1990; Samek-Lodovici, 2003; Butt and Geuder, 2001; Butt,

2003, for an extensive survey and characterization of these constructions). Finding a relation between light verbs and weak definites is something I have been suggested several times. The main reason why I do not explore this possible relation is because weak verbs do not really meet the simple characterization of light verbs I just provided. Even *to take* contributes with its literal meaning (i.e. ‘to capture physically’) in constructions like *to take the bus*. Furthermore, although *to take* could arguably be seen as behaving semantically bleached, other verbs belonging to the second group of weak verbs, like *to go* in *to go to the beach*, and *to leave* in *to leave the hospital*, are clearly providing their original meaning. The same happens with the verbs of the first group like *to open* in *to open the window* or *to call* in *to call the doctor*.

5.3.2 Weak verbs support functions

Returning to the characterization of weak verbs, let me start with the first group. The meaning of these verbs involves the purpose of the object they select. In other words, these verbs designate activities directly involved with the function of the object designated by the noun heading their internal argument. This is clearly observable in the case of *to play the piano* as the purpose of a piano (and of any other musical instrument) is to produce musical sounds, which is what happens when someone plays something. In this sense we could say that verbs of the first group directly allude to functions.

On the other hand, verbs of the second group also make allusion to functions but not in such a “compositional” fashion. Instead, they appear to do so by means of some further reasoning supported by world knowledge (see Aguilar-Guevara and Schulpen, 2011, and Chapter 6 for more details). This is what happens with examples like *to go to the hospital*. Nothing in the verb *to go* per se has to do with the function of a hospital (i.e. to provide medical services). It is the “default” inference that when one goes to a hospital one does it for medical reasons that enables the indirect allusion to the function of a hospital.

Given that both groups of weak verbs make reference to functions but each one do so by means of a different mechanisms, the question then is what is the common property to both groups. I suggest that the property is that both types of weak verbs refer to activities compatible with the functions. Most of the time, these are activities enabling the functions to be fulfilled (e.g. in order for a window to let the air in, one must *open the*

window; in order for a hospital to provide medical services, one must *go to the hospital*; in order for a bus to transport individuals, the individuals must *take the bus*). Sometimes the activities do not precede causally the function but still are compatible with it: if a hospital provides medical services, then one can *leave the hospital*; if a collection of dishes, forks, knives and glasses have been used to have a meal, then one must *do the dishes*. I summarize this discussion in the following generalization:

Generalization 2. *Weak verbs designate activities compatible with the characteristic function of objects designated by weak nouns combining with these verbs.*

This generalization, although accurately covers each weak verb presented above, is a loose generalization. In the next section I explain why.

5.3.3 Not every verb supporting a function is a weak verb

Although Generalization 2 covers all the weak verbs discussed so far, it overgenerates. Not every verb designating an activity compatible with the characteristic function of an object is a weak verb. Simple cases this generalization predicts, namely, verbs designating activities in which objects are used -like *to use*, *to operate*, or *to manipulate*- do not trigger weak readings:

- (199) Martha used #the radio and Alice did too.
- (200) Lola operated #the phone and Martha did too.
- (201) Lila manipulated #the oboe and Lola did too.

I could be argued that the meanings of these verbs, although by definition involving the use of objects, are too general and therefore not specifically compatible with the characteristic purpose of each type of object. After all, a radio could be used not only to get informed or amused, but also, for instance, to hit someone or to hide a diamond inside. The problem with this argument is that the same lack of specification holds of several weak verbs, in particular, those of the second type. I return to these cases in the following section, where I discuss the effects of stereotypicality in the emergence of weak readings.

5.4 Stereotypicality

In the previous sections I have made two generalizations about the common attribute to all weak nouns and weak verbs. Generalization 1 states that weak nouns refer to objects with a characteristic function in society for use by human beings. Generalization 2 states that weak verbs refer to activities compatible with the characteristic function of these objects. I have also shown that both generalizations overgenerate as not every functional noun can be a weak noun, and not every verb designating an activity compatible with the characteristic function of an object can be a weak verb. In this section I attribute this apparently irregular behavior to the effects of stereotypicality. I make new generalizations based on this notion, which account for all the data and, crucially, motivate part of the ingredients of the account of weak definites outlined in Chapter 3.

5.4.1 Stereotypes and the interpretation of sentences

Let me start by defining a stereotype as a series of conventional beliefs about a concept of individuals, events, characteristics, activities, or situations, which is part of the world a community has access to. A stereotype is constructed by the community on the basis of the regularity, frequency, habituality or homogeneity with which instances of the concept in question occurs in the world. For example, in Amsterdam the concept of Spanish tourists is associated with the stereotype of short, bearded, loud, young men as that is the usual type of Spanish tourist visiting the city.

To provide a complete characterization about stereotypes is beyond the scope of this dissertation (but I refer the reader to works like Hamilton, 1981; Rey, 1983; Hilton and von Hippel, 1996; Macrae et al., 1996; Dijksterhuis et al., 2001; Schneider, 2004; Banaji, 2002) and to related literature on prototype theory of concepts such as (Rosch and Mervis, 1975; Rosch et al., 1976; Rosch, 1977, 1978). However, there are three assumptions regarding the occurrence of stereotypes, which I would like to make explicit in order to support my future claims.

The first assumption is that, although stereotypes are very common in our world knowledge, not every concept necessarily invokes one. In other words, despite the fact that one can always have some ideas about a concept, not always these ideas are sufficiently well established among a representative number of the members of a community. For example,

in Amsterdam, the concept of Algerian tourists probably does not have a stereotype despite that everyone can always imagine how an Algerian tourist would be (i.e. probably, a not very tall man with dark skin and dark hair).

The second assumption is that stereotypes are constantly changing, just like the reality and idiosyncrasy of the community adopting them is doing so. That is to say, stereotypes can appear and disappear, but also they get enriched or impoverished. For example, probably a few decades ago, when Spanish people rarely traveled to the Netherlands for holidays, the concept of Spanish tourists was not yet associated with any stereotype.

My last assumption about stereotypes is that not all them are equally well established within a community. For example, the stereotype of Spanish tourists in Amsterdam, although quite stable among the inhabitants of the city, is perhaps less well established than that of Japanese tourists (i.e. smily and quiet men who always walk in groups, take pictures of everything, and, when taking pictures of themselves, they do the two-finger peace sign).

When communicating, we constantly use our shared experience in the world at the moment we formulate and interpret utterances. Since stereotypes are part of this world knowledge, they also participate in communication. For example, if I am giving indications to a friend who is trying to find me in the middle of a big crowd in the central train station of Amsterdam, and I tell him that I am standing next to a group of Spanish tourists, he would (and I would assume that he would) probably look for a group of short, bearded, loud men. The effects of stereotypes in the interpretation of sentences have been studied both theoretically and experimentally in connection to various phenomena such as anaphora resolution, conversational implicatures, genericity and reference to kinds, modification, reciprocals, etc. I refer the reader to works like Carlson (1977); Bosch (1983); Geurts (1985); Kamp and Partee (1995); Verkuyl (2000); Connolly et al. (2007); Kerem et al. (2009); Hampton and Jönsson (2011); Jönsson and Hampton (2012); Hampton (2010), among many others.

Stereotypicality has been implicitly related to the interpretation of other kind-referring NPs besides weak definites, namely, bare singular in Hindi (Dayal, 2003, 2011) and in Spanish (Espinal and McNally, 2011). In fact, in relation to the phenomenon of genericity and reference to kinds, Geurts (1985) affirms that “speakers’ information about a given kind is

embodied in a stereotype” (p. 251). This idea makes sense, as, in the end, stereotypes -as the morphology of the word “stereotype” suggests- are about types of objects rather than about objects. However, it should not be implicated from this statement that every kind is necessarily related to an stereotype. Evidence that this would not be accurate is the fact that we can produce NPs referring to unfamiliar kinds, which, given their novelty, do not come with any stereotype. The NPs in bold in the following sentences illustrate this:

- (202) This film is about the 10 rarest animals in the world. Two of these animals, **the Nomura’s Jellyfish** and **the Blanket Octopus**, are often found together in the near-surface waters of the open ocean. **Blanket octopuses** are so-named because of the membranous webs that the females have on two of their arms.
- (203) Don’t you think it’s amazing Fred invented **a pumpkin crusher** this morning? (adapted from Geurts, 2001)

Let me now show how stereotypes, in particular those about the manner objects are used, play a rather crucial role in the interpretation of weak definite sentences.

5.4.2 Stereotypical usages and the emergence of weak readings

5.4.2.1 Stereotypical usages and weak nouns

We have previously seen that, when an object is classified as a functional object, it is because it is used for a certain purpose. Based on our experience in the world, we construct an idea about the usual way and circumstances in which that object is used. For example, we know that we use a book when we want to read about something. We also know that to use a book we must read it in a particular way (i.e from left to right and from top to bottom, if the book is written in Latin alphabet, and usually after having read the title and the table of contents, if the book has it).

For some classes of functional objects, the conditions in which they are used are not only usual but also sufficiently well established among the members of a community. This is because, as it happens with other concepts evoking stereotypes, the objects, their function, and their circumstances of use are sufficiently specific, standard, regular, and part of

the everyday life of the community. That is what happens, for instance, with newspapers, which we use daily in a very particular way (i.e. we usually begin by checking the headings and then go to the page where the rest of the note we want to read is located), under very specific circumstances (i.e. we typically read the newspaper in the morning while having breakfast or in the afternoon after work as a relaxation activity), and for a very specific purpose (i.e. to get updated about the news of current events). As advanced in Chapter 3, I call all those well-established ideas about the conditions of use of daily objects *stereotypical usages* (SUs).

Let me now explain how SUs are related to the capacity of nouns and verbs to occur in weak definite constructions. I start with nouns. I have shown that weak nouns are functional nouns, but not every functional noun is a weak noun. I have also assumed explicitly that some but not every kind of functional object is associated with SUs. Thus, my proposal is that in order for a noun to be able to trigger a weak reading, in addition to designating a functional object, this object must be connected to SUs. In other words, despite the fact that we usually have some ideas about how to use functional objects and that these ideas might be brought to mind when phrases containing nouns designating these objects are interpreted, I propose that these ideas only play a role in triggering weak readings when they are sufficiently stable to qualify as stereotypes. Accordingly, the noun *newspaper* evokes SUs, whereas the noun *book* does not. This explains the contrast between *to read the newspaper* and *to read #the book*. My proposal is captured in the following generalization:

Generalization 3. *Weak nouns designate functional objects used in stereotypical ways.*

I believe that Generalization 3 is powerful from a methodological point of view, as it covers all and only those nouns that can trigger weak readings. Admittedly, it might sound as a loose generalization from a conceptual point of view, since it lies on the assumption that only some nouns are able to evoke usages stable enough to qualify as stereotypical.

In relation to this issue, I refer the reader to Appendix A. This appendix presents Pretest 1, Pretest 2, and Experiment 5 (also reported in Schulpen, 2011; Aguilar-Guevara and Schulpen, 2011) with the aim of providing support to the proposal that weak nouns, in contrast with regular nouns, are associated with stereotypical purposes. Pretest 1 identified nouns designating locations associated with the most typical purposes in

order to use them in Experiment 5. Pretest 2 identified nouns designating agents associated with the most typical purposes also to use them in Experiment 5. Inspired by a study reported in Klein et al. (2013), Experiment 5 tested the interpretation of sentences of the type *The AGENT NOUN went to the LOCATION NOUN*. The purpose of the study was to assess the strength of typical purposes associated with unmodified and individual-level modified regular and weak definites and confirm that those purposes associated with weak definites are stronger than those associated with regular definites, and that this strength remains even if the weak definite reading is cancelled by means of an I-modifier. The three studies are presented in an appendix instead of being part of the body of this dissertation because, although I believe that they at least indirectly substantiate the proposal just mentioned, the connection between the facts revealed by the studies and the special nature of weak nouns is not so clear and more studies are still necessary in order to validate it.

5.4.2.2 Stereotypical usages and weak verbs

Now let me revise our generalization about weak verbs, Generalization 2, in order to complement more adequately Generalization 3. Generalization 2 states that weak verbs designate activities compatible with the characteristic function of objects designated by weak nouns combining with the verbs. Given that I just proposed that the characteristic function of the objects is only relevant by being stereotypical, a more accurate generalization about weak verbs should be stated as follows:

Generalization 4. *Weak verbs designate activities compatible with the stereotypical ways of using objects designated by weak nouns combining with these verbs.*

This generalization still covers the contrast between *to listen to the radio* and *to fix #the radio*: whereas *to listen* is a verb referring to an activity that is compatible with the stereotypical ways in which radios are used, the verb *to fix* is not.

This generalization, however, is not yet able to discriminate verbs like *to use*, which does not trigger the weak reading of a definite like *the radio*, even when in principle its meanings is by definition not incompatible with the stereotypical way of using radios. Hence, to account for the lack of weak readings in a combination like *to use the radio*, either I refine Generalization 4 or I attribute the lack of weak reading to an extra reason.

I opt for the latter strategy and invoke once again Horn's (1984) principle of division of labor. Recall that, according to Horn, unmarked forms come with unmarked meanings, and marked forms come with marked meanings. Let me treat a sequence like *to listen to the radio* as an unmarked form, attributed with an unmarked interpretation involving the weak reading of the definite. Paraphrasing the way weak definite VPs are analyzed in Chapter 3, the unmarked interpretation of *to listen to the radio* is 'to listen to instantiations of the radio kind in a stereotypical way'. With this in mind, then I can justifiably treat the sequence *to use the radio* as a marked form, in which the definite does not trigger its unmarked, weak reading because in English there is another predicate, *to listen*, which more clearly alludes to the stereotypical way in which radios are used.

5.4.3 Stereotypical usages and the kind-reference analysis of weak definites

Now that I have examined the lexical meaning of weak nouns and predicates and count on two generalizations covering all and only weak nouns and verbs, let me go back to my analysis of weak definites and explain how these generalizations substantiate part of its ingredients.

Recall that the analysis proposes that weak definites refer to atomic kinds, which combine with object-level predicates by virtue of the Kind Lifting Rule. The KLR lifts object-level predicates to kind-level predicates, and incorporates the relations R and U into the denotation of the lifted versions. Through R , kinds are related to their instantiations. Through U , kinds are associated with sets of events in which their instantiations are used in stereotypical ways. Notice that U relates these SUs with kinds rather than with ordinary individuals following the idea that stereotypes are constructed in the basis of classes of objects rather than objects. The KLR applies to predicates only if one condition is fulfilled, namely, that there is a non-empty intersection between the set of events corresponding to U and the set of events corresponding to the verbs.

In other words, according to my analysis, a VP consisting of a verb plus a definite triggers weak definiteness if and only if two circumstances co-occur. The first circumstance is that the kind the definite refers to is associated with SUs. The second circumstance is that the set of events corresponding to the verb overlap with the set of events corresponding to the SUs. Generalization 3 supports the former circumstance as it states that weak nouns refer to objects used in stereotypical ways. This

is equivalent to saying that kinds of objects must be associated with SUs. Similarly, Generalization 4 supports the latter circumstance as it states that the weak verbs are compatible with the stereotypical ways in which objects are used. This is equivalent to an intersection between the set of events corresponding to verbs and the set of events corresponding to U . Now let me discuss, in the coming section, the implications that each of these generalizations brings as regards determining whether weak nouns and verbs constitute lexical classes.

5.5 Weak nouns and weak verbs as lexical classes

Now that I already examined in some depth the lexical meaning of weak nouns and verbs, I would like to discuss a question which naturally arises from the conclusions drawn so far: Is it possible and relevant to consider weak nouns and weak verbs as classes of words marked as such in the lexicon? I first discuss the question for weak verbs and then for weak nouns.

5.5.1 Weak verbs do not need a lexical class

According to my analysis of weak definites, weak uses of verbs are the result of the application of a lexical rule, the KLR, which transforms object-level predicates into enriched kind-level predicates. Obviously, lifted predicates are differentiated from non-lifted predicates. However, this does not mean that each one corresponds to a different entry in the lexicon. Double entries are not necessary, as the role of the rule is precisely to generate weak verbs out of regular ones. The application of the rule, as seen before, is in principle free, provided that the set of events corresponding to the verbs intersect the set of SUs corresponding to the kinds denoted by weak definites. There are two consequences of this partially unrestricted mechanism of generation of weak verbs. On the one hand, the set of verbs that can combine with the same definites is to some extent ample. On the other hand, given the intersection requirement, still not every verb triggers weak readings.

5.5.2 Weak nouns constitute a lexical class

To determine whether or not weak nouns should be treated as classes of words marked as such in the lexicon, we first need to identify the

most adequate way to account for the distinctive feature of weak nouns. According to Generalization 3, this feature is the association of objects with stereotypical usages. Given the context of this discussion, what immediately comes to mind is to specify this association in the lexical entry of the nouns. For example, the lexical representation of the noun *hospital* would include a link with the SU ‘getting medical services’.

This lexical way has an important advantage. As shown before, the range of weak nouns can vary from language to language (and even from dialect to dialect). Furthermore, even nouns designating the same (or at least similar) types of objects differ in their capacity to trigger weak readings. These facts indicate that, whether or not a functional noun behaves weakly –or, in more relevant terms, is associated with SUs– is determined idiosyncratically. If there is any module in language that can capture idiosyncrasy it is the lexicon.

However, to place the association of weak nouns with SUs in the lexicon have the unattractive result that either a noun like *hospital* is always associated with SUs even when it is not occurring in a weak definite configuration, or there exist two entries of the noun in the lexicon, one regular and one weak. Although I think that it is not necessary to postulate two entries, and it is pretty intuitive to assume that nouns like *hospital*, *school*, and *newspaper* are in fact associated with an stereotype involving the use of the object they designate, I leave for future research the proper examination of the possible consequences of both the single-entry and the two-entry options.

An alternative to the lexical approach that deserves consideration is to attribute the association of the objects with SUs to pragmatic inferences motivated by our experience in the world. In that way, the SU ‘getting medical services’ would be treated as an inference brought by the use of *hospital*, because we know that, when we go to a hospital, we typically go to receive medical services. An approach like this would prevent from stipulating double entries in the lexicon or assuming that the nouns occurring in weak definites are special.

However, the pragmatic approach also faces challenges. One empirical problem is that meaning enrichments exhibited by weak definite sentences have characteristics that are typical of truth-conditional content. For example, these enrichments are at-issue meanings (see Aguilar-Guevara and Schulpen, 2011, and Chapter 6 of this dissertation for a more detailed argumentation). Furthermore, one theoretical problem of treating the association of nouns with SUs as the result of pragmatic principles is that

this makes harder to differentiate SUs from the usual ideas about how to use objects evoked by any functional noun, independently of the noun triggering weak readings or not. By placing the association with SU in the lexicon, then the distinction between these and other common but not stereotypical usages turns linguistically relevant. This leads me to a third potential challenge for the pragmatic approach, which specifically concerns the way I formalize the meaning of weak definite sentences. If the link with SUs is established pragmatically, then the U predicate, which captures these usages, should no longer be part of the logical form of sentences with weak definites. The problem is that, if the U is not part of the logical form, then it becomes questionable whether or not it is still valid to attribute the licensing of weak readings to a non-empty intersection of the set of events corresponding to U and the set of events corresponding to weak verbs.

In sum, my answer to the question whether weak nouns constitute a class of nouns lexically differentiated is affirmative. I propose that what characterizes weak nouns is the specification in their lexical entry that the object designated by them is associated with SUs. I have opted for a lexical approach to this association instead of a pragmatic approach because I believe that the former can account straightforwardly for the idiosyncratic aspect of the weak definite phenomenon. Also, the pragmatic approach presents several problems. However, the lexical approach will also be challenged in the coming section, where I discuss the association of modified weak definites with SUs.

5.5.2.1 A possible problem: modified weak nouns

One challenge to the proposal that the association of weak nouns with SUs should be specified in their lexical entry is the existence of modified weak definites. As I showed in Chapter 4, weak definites can be modified but only by relational adjectives, which I treat as kind-level modifiers, following McNally and Boleda (2004).

To explain how these adjectives and weak nouns combine, there exist two possible ways: one compositional and one lexical. In the former approach, adjectives and nouns are combined by means of standard compositional mechanisms. To explain how the SUs associated with the nouns can still give rise to the emergence of weak readings once the nouns are combined with the adjectives, it would be necessary to assume that SUs somehow “project” through the adjective-noun combination. To explain

why some but not all the combinations of relational adjectives and weak nouns can generate weak readings (e.g. *the psychiatric hospital* as opposed to *#the French hospital*), it would be necessary to assume that SUs only project if the corresponding nouns combine with adjectives semantically compatible with the SUs. Accordingly, an adjective compatible with the SUs associated with *hospital* would be *psychiatric* but not *French*. Therefore, *the psychiatric hospital* receives a weak definite reading whereas *the French hospital* does not.

The compositional account faces some questions and at least one problem. The first question is what the projection of SUs exactly means. The second question is how this projection should be theoretically modeled. Related to that, another question is how we can determine and model that some adjectives are compatible with SUs but some others are not. Furthermore, the problem of the compositional approach is that it does not give room to the influence of the modifier on the content of the SU associated with the noun. Therefore, we should expect SUs to be the same for modified and unmodified weak definites containing the same noun. The example of *the hospital* versus *the psychiatric hospital* shows that this is not the case. The stereotypical ways in which psychiatric hospitals are used (e.g. to provide treatment for mental disorders) are not exactly the same as those in which hospitals in general are used (e.g. to provide all kinds of medical services). This indicates that the role of the adjectives is not just to let SUs project, but they also modify the SUs.

On the other hand, under a lexical approach to the meaning of weak adjective-noun combinations, adjectives and nouns do not combine compositionally but rather form compounds stored as such in the lexicon. These compounds, just like simple weak nouns, include in their lexical semantics an association with SUs. Under this approach, the combination *psychiatric hospital* forms a compound whereas *French hospital* does not.

A lexical approach is advantageous because it permits to explain the difference between the SUs associated with modified and unmodified weak definites. Given that modified and unmodified weak nouns have separate lexical entries, each one can be associated with different (although probably conceptually related) SUs. Crucially, this approach also permits to provide a better explanation to the contrast between *the psychiatric hospital* and *the French hospital*. If weak adjective-noun combinations are compounds stored in the lexicon is because they correspond to concepts well established among the members of a linguistic community. Accordingly, the concept of psychiatric hospital is well established whereas the

concept of French hospital is not. I find this explanation more convincing than saying that *French*, unlike *psychiatric*, allows projection of the SUs associated with the noun *hospital*, and that is why the weak definite reading can emerge.

The lexical approach is also challenged by some questions though. First, how economical is to postulate that every weak adjective-noun combination is stored in the lexicon of the speakers? Second, does that mean that there is no room for spontaneously made combinations? Third, if now we are willing to accept that weak adjective-noun combinations are compounds stored in the lexicon, how relevant is the main conclusion of Chapter 4, namely, that only kind-level adjectives can occur in weak definites? (in other words, why cannot we have weak adjective-noun combinations made of any type of adjective no matter if it is kind-level or individual-level?) Could the relevance be that concepts are built up on the basis of types and not on the basis of individuals? The answers to all these questions need more discussion, which I leave for future research. As part of this research, I would like to explore the relation between the emergence of weak definite readings and the existence of concepts and its expression in natural language (Fodor, 1975; Rey, 1983; Loar, 1986; Peacocke, 1992; Kamp and Partee, 1995; Fodor, 1998; Aydede, 1998; Laurence and Margolis, 1999; Davis, 2002; Margolis and Laurence, 2007).

Before I conclude, let me provide one more piece of evidence in favor of the lexical approach. In languages like Dutch, there exist modified weak definites without unmodified counterparts. This is the case of Dutch *het Chinese restaurant* ‘the Chinese restaurant’ as opposed to *het restaurant* ‘the restaurant’ in some dialects. This case can be straightforwardly accounted for provided the assumption that *Chinese restaurant* but not *restaurant* is a weak nominal, and, therefore, its lexical meaning includes an association with SUs (i.e. ‘eating a particular type of food’).

In sum, to account for the meaning of weak adjective-noun combinations, it is possible to either treat them as compositional combinations or as compounds stored in the lexicon. Each approach faces different problems. However, I have shown that the lexical approach is more intuitive. This means that I assume that weak adjective-noun combinations, just like unmodified weak nouns, are marked as such in the lexicon. Let me show in the coming section how this marking can be formalized.

5.6 Representing the meaning of weak nouns

The main conclusion of the previous discussion is that weak nouns (and adjective-noun combination) should be differentiated as such in the lexicon. In the present section, I provide an attempt to represent their meaning formally. To do so, I make use of the Generative Lexicon Theory.

5.6.1 Generative Lexicon Theory

This section introduces the Generative Lexicon Theory (GLT), a lexical semantics framework, mainly developed by Pustejovsky (1991, 1995, 1998a,b, 2001). It is important to clarify that this introduction is rather succinct and focuses on the notions of the framework that are relevant to characterize weak nouns. For a complete overview of the framework I refer the reader to the references previously mentioned.

GLT treats the lexical meaning as a complex, dynamic, and generative system of features and relations, which are constantly enriched through the occurrence of words in new contexts. To account for the multiplex nature of the meaning of words, GLT uses rich lexical entries. These entries are schematized in (204) and illustrated in (205) and (206) with the noun *cake* and the verb *to sleep*. The schema in (204) is adapted from Pustejovsky (1995). In the schema, the variable α represents words, and the variables x and e_n represent individuals and events forming part of the meaning of the words. The representations of the noun *cake* and the verb *sleep*, (205)-(206) are also adapted from Pustejovsky (1995).

(204)

$$\left[\begin{array}{c} \alpha \\ \text{ARGUMENT} \\ \text{STRUCTURE} = \left[\begin{array}{c} \text{ARG}_n = x \\ \dots \end{array} \right] \\ \text{EVENT} \\ \text{STRUCTURE} = \left[\begin{array}{c} E_n = e_n \\ \dots \end{array} \right] \\ \text{QUALIA} \\ \text{STRUCTURE} = \left[\begin{array}{c} \text{FORMAL} = \text{what } x \text{ is} \\ \text{CONSTITUTIVE} = \text{what } x \text{ is made of} \\ \text{TELIC} = \text{function of } x \\ \text{AGENTIVE} = \text{how } x \text{ came into being} \end{array} \right] \end{array} \right]$$

(205)

$$\left[\begin{array}{l} \mathbf{Cake} \\ \text{ARGSTR} = \left[\text{ARG}_1 = x : \text{physical object} \right] \\ \text{QUALIA} = \left[\begin{array}{l} \text{FORMAL} = \text{food}(x) \\ \text{CONSTITUTIVE} = \text{made of flour, eggs, sugar...}(x) \\ \text{TELIC} = \text{eat}(e^P, y, x) \\ \text{AGENTIVE} = \text{cook}(e'^P, z, x) \end{array} \right] \end{array} \right]$$

(206)

$$\left[\begin{array}{l} \mathbf{Sleep} \\ \text{ARGSTR} = \left[\text{ARG}_1 = x : \text{animate individual} \right] \\ \text{EVENTSTR} = \left[\text{E}_1 = e_1 : \text{process} \right] \\ \text{QUALIA} = \left[\text{FORMAL} = \text{run act}(e_1, x) \right] \end{array} \right]$$

As can be seen, the entries comprise various *levels of representations* corresponding to different aspects of the meaning: *Argument Structure*, *Event Structure*, and *Qualia Structure*. The Argument Structure (*ArgStr*) indicates the number and type of arguments of a word, which is seen as an expression denoting a function (e.g. the noun *cake* takes a single argument which is a physical object). The Event Structure (*EventStr*) encodes the number and type of events the meaning of a word comprises when the word is a verb or any other expression involving eventuality. Building on Vendler (1967), it is assumed that events can be states, processes, or transitions (e.g. the verb *sleep*, which comprises only one event argument, designates a process). Finally, the *Qualia Structure* (*Qualia*) is the component specifying prototypical features of the entities and events associated with a word, as well as the possible relations among

them.^{3 4}

The Qualia Structure in turn comprises four components: *Formal Quale*, *Constitutive Quale*, *Telic Quale*, and *Agentive Quale*. The Formal Quale specifies attributes of the objects such as spatial orientation, size, form, dimensionality, color, etc. By making this specification, the objects are also distinguished from other ones within the same domain (e.g. for *cake* this Quale indicates that the designated object is food). The Constitutive Quale encodes information about the internal constituency of the objects (e.g. for *cake*, it indicates that the corresponding object is made from a mixture of flour, sugar, eggs, etc). The Agentive Quale encodes all the factors causing an object to exist, like a creator, an artifact, a causal chain, etc (e.g. the cause of existence of a cake is an individual who makes it). Finally, the Telic Quale specifies information about the purpose of existence of the objects, namely, their function (e.g. the function of a cake is to be eaten).

To connect the four levels of representations of the lexical entries, GLT postulates a set of *generative operations*; that is to say, mechanisms enabling words to be interpreted compositionally when they combine with other words. Some of these operations are *Subselection*, *Type Coercion*, and *Co-composition*. I do not explain here how these mechanisms operate. Only,

³If the information indicated in the Qualia consists of features that are prototypical, as Pustejovsky suggests, then it is possible to say that this information is about classes of objects rather than concrete members of these classes. Using the conventional linguistic terms to refer to this ontological difference, namely, kind vs. individuals, the information in the Qualia Structure seems to be about kinds rather than individuals instantiating these kinds. The questions then are whether this justifies including the distinction between kinds and ordinary individuals into the lexical entries of words and how this would be represented (e.g. by indicating that the variables in the lexical representation range over kinds or over individuals). To my knowledge, the kind/individual distinction has not been addressed in the GLT literature and perhaps this is not an accidental omission but rather a statement that such a distinction is not relevant at the level of the lexicon. I could accept this if there would not exist words that have traditionally been assumed to denote predicates selecting kinds, like the verbs *to become extinct* and *to invent*, and perhaps names of species such as *Panthera leo* (Krifka et al., 1995). I leave this issue for future research.

⁴Notice that the representation of *cake* includes an event variable e^P rather than a variable with a subindex e_n in the information corresponding to the Telic role. Pustejovsky makes this difference in notation to distinguish those events which are directly part of the meaning of a word (i.e. because the events themselves are part of EventStr) from those events indirectly associated with the word (i.e. because of other components of the Qualia). The super index of these variables serves to indicate whether those events are processes (e^P), transitions (e^T), or states (e^S).

as an illustration of their general role, let me say that Type Coercion is the operation ensuring that an argument satisfies the selectional requirements of a predicate. To do so, Type Coercion converts the argument into the type expected by a function when the former and the latter do not match, and thus an error type would be caused.

The way GLT accounts for the meaning of words displays several advantages. One of them is that, given the generative nature of the components constituting the lexicon, it is possible to account for the fact that words are continuously used in new contexts and acquiring new senses. Another advantage of GLT is that, by means of these different components, the framework can capture distinctions between the types of objects designated by words, which mirror the way humans categorize the world. One of these distinctions is that between natural objects and artifacts, which I discuss in the following subsection.⁵

5.6.1.1 Natural and functional nouns

One of the virtues of GLT is that it can capture distinctions between the nature of objects designated by words. One relevant distinction is that between *natural objects* and *functional objects* (see Wierzbicka, 1984, among many others). Natural objects, like water, stones and lions, are objects occurring in the world without the intervention of humankind. Functional objects are artifacts, like books, beer, and schools, whose existence is in principle caused by the action of a human agent in order to fulfill an specific purpose useful for human beings. The distinction between nouns naming natural kinds (*natural nouns*) and nouns naming functional objects (*functional nouns*) is captured by means of the presence/absence of the Telic role in the Qualia. Natural nouns only include the Constitutive and Formal roles (i.e. information about, for example, their physical properties such as form, size, constituting substance, etc.) in their representations. Functional nouns in addition include the Telic role and, usually, the Agentive role as well. To illustrate this, compare the lexical representations of the natural noun *stone* (207) and the functional noun *beer* (208) (also adapted from Pustejovsky, 1995):

⁵A third advantage of GLT is that it can account for the fact that words are usually associated with several senses which are interrelated. I discuss this phenomenon in 5.6.2.1.

(207)

$$\left[\begin{array}{l} \mathbf{Stone} \\ \text{ARGSTR} = \left[\begin{array}{l} \text{ARG}_I = x : \textit{physical object} \end{array} \right] \\ \text{QUALIA} = \left[\begin{array}{l} \text{CONSTITUTIVE} = \textit{made of mineral}(x) \\ \text{FORMAL} = x \end{array} \right] \end{array} \right]$$

(208)

$$\left[\begin{array}{l} \mathbf{Beer} \\ \text{ARGSTR} = \left[\begin{array}{l} \text{ARG}_I = x : \textit{liquid} \end{array} \right] \\ \text{QUALIA} = \left[\begin{array}{l} \text{CONSTITUTIVE} = \textit{made of water, malt, ...}(x) \\ \text{FORMAL} = x \\ \text{TELIC} = \textit{drink}(e^T, y, x) \\ \text{AGENTIVE} = \textit{make}(e'^P, w, x) \end{array} \right] \end{array} \right]$$

I just indicated that in principle functional objects are created by human beings in order to fulfill a function. In other words, the purpose for which they exist constitutes a property which defines them. However, sometimes natural objects can also be attributed with functions due to a typical utilitarian relation that humans establish with them. One simple example is water, which is a natural element humans use to keep themselves hydrated. Given the generative nature of the lexicon, according to GLT, this (non-original) functional sense of the word *water* can be accounted for by means of the addition of a Telic role on its lexical representation:

(209)

$$\left[\begin{array}{l} \mathbf{Water} \\ \text{ARGSTR} = \left[\begin{array}{l} \text{ARG}_I = x : \textit{liquid} \end{array} \right] \\ \text{QUALIA} = \left[\begin{array}{l} \text{CONSTITUTIVE} = \textit{liquid}(x) \\ \text{FORMAL} = x \\ \text{TELIC} = \textit{drink}(e^T, y, x) \end{array} \right] \end{array} \right]$$

Now that I have shown how the lexical meaning of nouns is represented in GLT, let me discuss in the following section how this framework can be used to capture the special nature of weak nouns.

5.6.2 Weak nouns represented in GLT

Generalization 3 states that weak nouns designate functional objects used in stereotypical ways. The first part of this generalization, which, in fact, corresponds to Generalization 1, can be captured straightforwardly in GLT. As we saw in the previous subsection, in this framework there is already a way to represent the lexical meaning of functional nouns. In this representation, the component in charge of indicating the purpose of functional objects is the Telic role. This means that every weak noun must have a Telic role in its Qualia.⁶ The following representations illustrate this for the nouns *phone*, *doctor*, and *beach*. The Telic roles corresponding to *phone* and *doctor* are inherent to the meaning of the nouns (i.e. the function of phones and doctors are defining properties of the objects as they were created for that purpose), whereas the Telic role of *beach* is attributed by convention (i.e. beaches are not by definition to recreate but that is the use people make of them).

(210)

$$\left[\begin{array}{c} \mathbf{Phone} \\ \text{ARGSTR} = \left[\text{ARG}_1 = x : \textit{physical object} \right] \\ \text{QUALIA} = \left[\begin{array}{l} \text{CONSTITUTIVE} = \dots \\ \text{FORMAL} = \dots \\ \text{TELIC} = \textit{communicate with}(e^T, v, w, x) \\ \text{AGENTIVE} = \dots \end{array} \right] \end{array} \right]$$

(211)

$$\left[\begin{array}{c} \mathbf{Doctor} \\ \text{ARGSTR} = \left[\text{ARG}_1 = x : \textit{human} \right] \\ \text{QUALIA} = \left[\begin{array}{l} \text{CONSTITUTIVE} = \dots \\ \text{FORMAL} = \dots \\ \text{TELIC} = \textit{provide medical} \\ \textit{assistance}(e^T, x, w) \\ \text{AGENTIVE} = \dots \end{array} \right] \end{array} \right]$$

⁶My account of weak definites is not the only one attributing relevance to the Telic role of weak nouns in the emergence of weak definite readings. Corblin (2014) and Zwarts (2014) also incorporate the notion into their respective approaches. I discuss them in Chapter 8.

(212)

$$\left[\begin{array}{l} \mathbf{Beach} \\ \text{ARGSTR} = \left[\begin{array}{l} \text{ARG}_I = x : place \\ \text{CONSTITUTIVE} = \dots \\ \text{FORMAL} = \dots \\ \text{TELIC} = recreate\ at(e^T, w, x) \end{array} \right] \\ \text{QUALIA} = \end{array} \right]$$

Let me now propose a way to capture the second part of the ?paraphrasing of Generalization 3; that is to say, that the functional objects designated by weak nouns are used in stereotypical ways. Recall that this feature is what I propose to be the distinctive property of weak nouns. However, before I do so, let me make a relevant digression about polysemous weak nouns, in the coming subsection.

5.6.2.1 A digression about polysemous weak nouns

Quite often, a word carries multiple senses. The following examples illustrate this phenomenon for the words *key* and *book*:

- (213) a. The **key** is to get to know people and trust them to be who they are.
[*key* = solution]
b. I left the **key** on your desk.
[*key* = physical object]
- (214) a. That **book** seems to be very interesting.
[*book* = information]
b. Can you pass me that **book**?
[*book* = physical object]

Interestingly, some times the various senses of a word are interrelated. A linguistic evidence of this is the fact that only those senses can be evoked in the same discourse without causing infelicity. The two senses of *book* display this property whereas the two senses of *key* do not (Pustejovsky, 1995):

- (215) Can you pass me that **book**₁ and that newspaper? The **book**₂ seems to be very interesting by the way.

- [*book*₁ = physical object]
 [*book*₂ = content]
- (216) Her project was to get a boyfriend. The **key**₁ was to attract her potential partner with her fashionable dress sense. #A problem she encountered is that she couldn't use the **key**₂ to open the door of his house.
 [*key*₁ = solution]
 [*key*₂ = physical object]

The type of polysemy that *book* illustrates is called *systematic* or *logical polysemy*. GLT captures this phenomenon by including complex objects called *dotted objects* in the lexical representations of the words. This is schematized in (217) and illustrated in (218) again with the word *book*:

(217)

$$\left[\begin{array}{c} \alpha \\ \text{ARGSTR} = \left[\begin{array}{l} \text{ARG}_1 = x : \tau_1 \\ \text{ARG}_2 = y : \tau_2 \end{array} \right] \\ \text{QUALIA} = \left[\begin{array}{l} \text{Dotted object} = \tau_1 \bullet \tau_2 \\ \text{CONSTITUTIVE} = \dots \\ \text{FORMAL} = P(y, x) \\ \text{TELIC} = \dots \\ \text{AGENTIVE} = \dots \end{array} \right] \end{array} \right]$$

(218)

$$\left[\begin{array}{c} \mathbf{Book} \\ \text{ARGSTR} = \left[\begin{array}{l} \text{ARG}_1 = x : \text{information} \\ \text{ARG}_2 = y : \text{physical object} \end{array} \right] \\ \text{QUALIA} = \left[\begin{array}{l} \text{Dotted object} = \text{information} \bullet \text{physical_object} \\ \text{CONSTITUTIVE} = \dots \\ \text{FORMAL} = \text{hold}(y, x) \\ \text{TELIC} = \text{read}(e^T, w, x \bullet y) \\ \text{AGENTIVE} = \text{write}(e'^T, v, x \bullet y) \end{array} \right] \end{array} \right]$$

Several weak nouns such as *hospital*, *bank*, *school*, *newspaper*, *train* and *radio* are systematically polysemous words. They designate a physical object but also an institution. The following sentences illustrate this for the nouns *newspaper* and *train*:

- (219) a. Could you please bring me the newspaper?
 [*newspaper* = physical object]
 b. The newspaper fired three reporters last week.
 [*newspaper* = institution]
- (220) a. I cannot see the train!
 [*train* = physical object]
 b. The train went bankrupt after 5 years due to the fact that
 tracks were laid over the Connecticut shoreline.
 [*train* = institution]

Following the previous discussion about the treatment of systematically polysemous words in GLT, the structure in (221) represents the complex nature of the meaning of *train* by means of a dotted object combining a physical and an institutional object:

$$(221) \quad \left[\begin{array}{c} \mathbf{Train} \\ \text{ARGSTR} = \left[\begin{array}{l} \text{ARG}_1 = x : \text{institution} \\ \text{ARG}_2 = y : \text{physical object} \end{array} \right] \\ \text{QUALIA} = \left[\begin{array}{l} \text{Dotted object} = \text{institution} \cdot \text{physical object} \\ \text{CONSTITUTIVE} = \dots \\ \text{FORMAL} = \dots \\ \text{TELIC} = \text{transport}(e^T, w, x \cdot y) \\ \text{AGENTIVE} = \dots \end{array} \right] \end{array} \right]$$

There is one reason in particular why I acknowledge that some weak nouns correspond to complex types including institutions. My account of weak definites involves reference to unique, abstract objects, which I claim to be kinds. Given that some weak nouns in any case are associated with institutions, which are abstract objects and, at first sight, unique (e.g. the institution TRAIN), another alternative would be to assume that every weak noun indeed designates a complex type *institution.physical object* and then claim that weak definites make reference to the institution part rather than to a kind. This alternative has been suggested by Goldschmidt (2011).

I see two problems with such an institution-referring analysis. First, it is challenging to relate an institution to each weak noun; consider

cases like *beach*, *window* or *treadmill*. Second, these institutions are not necessarily unique. A simple evidence of that is the fact that, as (222) illustrates, indefinite DPs headed by the same nouns occurring in weak definites can refer to institutional objects. These phrases would not be felicitous if their referent would be a unique individual in the context.

- (222) a. **A newspaper** published an article by Marx where he defended the freedom of the press.
 [*newspaper* = institution]
 b. Can you sue **a bank** for harassment and freezing your bank account?
 [*bank* = institution]

Perhaps none of these two problems are decisive. However, the main reason why I opt for a kind-referring analysis is because, as shown in the previous chapters, it is able to account for most of the peculiarities of weak definites. This includes those properties that clearly reflect the resemblance between weak definites and generic definites, which are also kind-referring.

5.6.2.2 Telic roles and stereotypicality

The second part of Generalization 3, namely, that objects designated by weak nouns are objects used in stereotypical ways, is what differentiates weak nouns from other functional nouns. To mark this difference, one possibility that I would like to put into consideration is to specify in the lexical entry of the nouns that their Telic role constitutes an stereotype or is stereotyped. The following representations of *phone*, *doctor* and *beach* include this specification:

(223)

$$\left[\begin{array}{l} \mathbf{Phone} \\ \text{ARGSTR} = \left[\begin{array}{l} \text{ARG}_1 = x : \textit{physical object} \\ \text{CONSTITUTIVE} = \dots \\ \text{FORMAL} = \dots \\ \mathbf{STEREOTYPED TELIC} = \textit{communicate} \\ \textit{with}(e^T, v, w, x) \\ \text{AGENTIVE} = \dots \end{array} \right] \\ \text{QUALIA} = \end{array} \right]$$

(224)

$$\left[\begin{array}{l} \mathbf{Doctor} \\ \text{ARGSTR} = \left[\text{ARG}_I = x : \textit{human} \right] \\ \text{QUALIA} = \left[\begin{array}{l} \text{CONSTITUTIVE} = \dots \\ \text{FORMAL} = \dots \\ \mathbf{STEREOTYPED} \text{ TELIC} = \textit{provide medical} \\ \textit{assistance}(e^T, w, x) \\ \text{AGENTIVE} = \dots \end{array} \right] \end{array} \right]$$

(225)

$$\left[\begin{array}{l} \mathbf{Beach} \\ \text{ARGSTR} = \left[\text{ARG}_I = x : \textit{place} \right] \\ \text{QUALIA} = \left[\begin{array}{l} \text{CONSTITUTIVE} = \dots \\ \text{FORMAL} = \dots \\ \mathbf{STEREOTYPED} \text{ TELIC} = \textit{recreate}(e^T, w, x) \end{array} \right] \end{array} \right]$$

Of course, the details of this proposal would have to be worked out in future research once its empirical and theoretical value, as well as its possible predictions, have been corroborated.

5.7 Conclusion

The present chapter discussed the lexical meaning of weak nouns and weak verbs in order to identify a common feature to all the members of each category. The aims were to better understand the distributional restrictions both weak nouns and weak verbs are subject to, and, by doing this, to motivate better the conditions of emergence of weak definite readings proposed by my analysis.

After the introduction in Section 5.1, Section 5.2 examined the meaning of weak nouns. The main generalization made in this section, Generalization 1, was that the property common to all weak nouns is that they designate objects associated with a characteristic function. This generalization is accurate as it covers all the instances of weak nouns, including apparent counterexamples such as nouns naming natural objects and professions. At the same time, this generalization is not restrictive

enough as not every noun naming a functional object can occur in a weak definite. After that, Section 5.3 discussed the lexical properties of weak verbs. The main generalization, Generalization 2, was that weak verbs refer to activities compatible with the characteristic function of the objects designated by the weak nouns combining with these verbs. This generalization, although accurate, also overgenerates, as not every verb designating an activity compatible with the characteristic function of an object can be a weak verb. Section 5.4 built on Generalization 1 and 2 by discussing the effects of stereotypicality on the emergence of weak definite readings. Two more generalizations were made. Generalization 3 states that weak nouns designate functional objects used in stereotypical ways. Generalization 4 states that weak verbs designate activities compatible with these stereotypical ways of use. Generalizations 3 and 4 not only cover (almost) all and only weak nouns and verbs. Crucially, they motivate one of the main ingredients of my account of weak definites, namely, the presence in the logical form of weak definite sentences of the U predicate, which represents the SUs associated with kinds. Given the presence of this predicate, my account predicts that a VP consisting of a verb plus a kind-referring definite triggers weak definiteness if and only if the kind the definite refers to is associated with SUs, and the set of events corresponding to the verb overlap with the set corresponding to the SUs. Generalization 3 substantiates the first condition, whereas Generalization 4 substantiates the second one.

Based on the conclusions previously drawn, Section 5.5 discussed the question whether weak nouns and verbs constitute classes of words lexically well defined. The conclusion about weak verbs is that, as they are the result of the application of the Kind Lifting Rule, they do not constitute a lexical class. The conclusion about weak nouns is that they do constitute a lexically differentiated class of nouns, and what characterizes them is the specification in their lexical entry that the object they designate is used in stereotypical ways.

Section 5.6 provided an attempt to formally represent the meaning of weak nouns. To do so, I made use of basic notions of the Generative Lexicon Theory, which is a framework that represents the lexical meaning of words by means of structures comprising four levels of representation. One of these levels is the Qualia, which in turn is composed of four components. One of these components, the Telic role, is in charge of indicating the purpose of functional objects. My tentative proposal is to represent the meaning of weak nouns in the same way GLT represents

any functional noun; that is to say, by including a Telic role, but with the specification that this Telic role is stereotyped. This proposal, although plausible, requires confirmation from further research.

This chapter has provided empirical and theoretical evidence in favor of one important ingredient of my analysis of weak definites, namely, the association of kinds with stereotypical usages. Then I can proceed to motivate another relevant aspect of the theory. In the next chapter I motivate the presence of the *U* predicate in the logical form of weak definite sentences, which predicts that the meaning enrichment exhibited by the sentences is (at least partly) truth-conditional.

CHAPTER 6

Literal and enriched meaning of weak definites

Abstract. A weak definite sentence typically conveys a literal and an enriched meaning. This chapter aims to determine the semantic-pragmatic nature of each type of inference. To do so, the chapter examines, among other things, whether or not the inferences are detachable, reinforceable, defeasible, at-issue, and projective, and compares them with entailments, presuppositions, conventional implicatures, conversational implicatures, and idiomatic meanings. The main conclusion from this discussion is that, whereas literal meanings behave as regular, truth-conditional content, enriched meanings are partly truth-conditional and partly conversational implicature.

6.1 Introduction

From an intuitive point of view, weak definite sentences seem to convey two types of information, as examples (226)-(227) illustrate. One of the contents, which I identify as the *literal meaning* (LM), is evidently derived from the combination of the meaning of the sentence's constituents (Searle, 1978). The other content, which I call *enriched meaning* (EM), cannot be directly attributed to any constituent:

- (226) Marta called the doctor
LM = Marta called a doctor.
EM = Marta called to ask for medical assistance.

- (227) Lola went to the store.
 LM = Lola went to a store.
 EM = Lola went to do some shopping.

Sentences with bare singulars in complementary distribution with weak definites also display both LMs and EMs:

- (228) Lu is in jail.
 LM = Lu is in a jail.
 EM = Lu is to serve a sentence.
- (229) Theo went to church.
 LM = Theo went to a church.
 EM = Theo went to attend Mass

In the light of the discussions in previous chapters, an important question that arises is what the semantic-pragmatic nature of LMs and EMs is. From an intuitive viewpoint, it would seem obvious that LMs reflect truth-conditional content but EMs do not do so. The fact that it is not possible to associate EMs directly with any of the constituents of the sentences (e.g. nothing in (227) explicitly commits to shopping) rather suggests that these inferences might be conventional or conversational implicatures, or presuppositions, or idiomatic meanings.

From the viewpoint of my analysis of weak definites, both LMs and EMs appear to be truth-conditional contents. Recall that, according to this approach, the logical form of a weak definite sentence looks like in the following example:

- (230) a. Lola went to the store.
 b. $\exists e[Go\text{-}to(e) \wedge Ag(e) = lola \wedge R(Loc(e), \mathbf{S}) \wedge U(e, \mathbf{S})]$

This logical form states that Lola is the agent involved in an event of going to a location exemplified by the store kind, and that event is part of the stereotypical usages associated with that kind. The first part of this statement – that Lola is the agent involved in an event of going to a location exemplified by the store kind – clearly corresponds to the LM of the sentence, namely, that Lola went to a store.¹ Similarly, we can say that the second part of the statement – that the event is part of the

¹Notice that in the paraphrases of LMs I always use indefinite noun phrases to make reference to the objects weak definites refer to in the actual sentences. For

stereotypical usages associated with the store kind— corresponds to the EM, that Lola went to do some shopping, considering that in our daily life the stereotypical way of using stores involves doing shopping.

Thus, whereas the empirical viewpoint and my analysis of weak definite sentences coincide in treating LMs as truth-conditional content, they conflict with each other in the way they approach to EMs. From the empirical viewpoint, EMs seem to be non-truth-conditional. According to my approach, given the inclusion of the *U* relation in the logical form of the sentences, EMs appear to be truth-conditional. In order to resolve this conflict, the present chapter examines in detail the semantic-pragmatic nature of LMs and EMs. The specific goals are to corroborate that LMs should be considered truth-conditional content, and to determine the best way to treat EMs. To do so, I examine whether or not LMs and EMs display five properties: detachability, reinforceability, defeasibility, at-issueness, and projection. These properties are useful to characterize different types of inferences such as entailments, presuppositions, conventional implicatures, conversational implicatures, and idiomatic meanings. From this examination, I conclude that LMs in fact are truth-conditional content, and propose to analyze EMs as being partly entailments and partly conversational implicatures. This proposal adequately captures the intuition that part of the interpretation of weak definite and bare singulars sentences is not derived compositionally and is also more precisely compatible with what my analysis of weak definites proposes.

This chapter is structured as follows. Section 6.2 defines the five meaning properties mentioned before and then uses them to characterize the five types of meanings, also already mentioned. Section 6.3 discusses the nature of LMs by assessing whether they display the meaning properties, and then comparing LMs with the five types of contents. In the same way, Section 6.4 discusses the nature of EMs. Finally, Section 6.5 provides conclusions.

example, the LM of *Lola called the doctor* is ‘Lola called a doctor’. I use an indefinite only to express in natural language that this sentence literally means that Lola called at least a doctor. However, this does not mean that I adopt the referential properties of the indefinite. As I will show in Chapter 7, indefinites used in argument position, typically introduce referents into the discourse. This is opposite to the referential defectiveness that I attribute to weak definites and capture by adopting a style of logical form that avoids quantification over individuals exemplifying kinds, as (230b) illustrates.

6.2 Tests and meaning ontology

Sentences can convey different types of contents or *inferences*. Whereas some of these inferences are derived from the composition of the meanings of the elements constituting a sentence, some others arise as the result of a pragmatic reasoning, and others are associated with the presence of a particular element in the sentence. So, the *trigger* of these inferences can be a word (or construction) in the sentence, the entire sentence, or the utterance of the sentence in a particular context. Each inference pattern is characterized by the presence or lack of a number of interpretative properties, for example, the capacity of the inferences to be cancelled or defeated explicitly without causing the embedding discourse to be odd.

In the present section, I describe five meaning properties and then use them to characterize five types of contents. The meaning properties are detachability, reinforceability, defeasibility, at-issueness, and projectivity. The types of inferences are entailments, presuppositions, conversational implicatures, conventional implicatures and idiomatic meanings. Both the meaning properties and the types of inferences have been extensively studied (e.g. Stalnaker, 1974; Grice, 1975; Karttunen and Peters, 1979; Gazdar, 1979; Horn, 1984; Heim, 1992; Horn, 1996, 2002; Abbott, 2000; Levinson, 2000; Potts, 2004, 2005, 2007b,a; Beaver and Geurts, 2010; Roberts, 1996, 2006; Roberts et al., 2009; Simons, 2001; Simons et al., 2011; Tonhauser, 2011; Tonhauser et al., 2013, among many others).

The purpose of the present characterization is to provide the background necessary to later discuss the pragmatic-semantic nature of the literal and enriched meanings of weak definite sentences. Given this, the presentation I provide of each category, especially that of the types of meanings, is rather succinct and based on the most paradigmatic cases discussed in the literature.² It is not my intention to ignore that the range of phenomena that are covered by each category is large and diverse and that there is an extensive discussion in the literature behind each term. However, as this complexity and diversity are not relevant for the purposes of the section, I rather opt for referring the reader to the relevant literature in each case. Thus, the reader who is familiarized with the notions I am about to describe may skip this section.

²Also, it is important to remark that the definitions I provide here are meant to apply to declarative sentences only.

6.2.1 Meaning properties

For each of property I discuss here, I provide a definition plus an example of an inference displaying the property and of an inference lacking it.

6.2.1.1 Detachability

A content conveyed by the utterance of a sentence is said to be detachable if the trigger of the content cannot be substituted by another trigger semantically equivalent to it without resulting in the change or disappearance of the content. For example, the inference associated with the sentence in (231a) is due to the presence of the conjunction *but*. If *but* is replaced by *and* (231b), which has an equivalent meaning, then the inference does not arise anymore:

- (231) a. I work as a receptionist but I am very happy with my life.
Inference = Working as a receptionist conflicts with being happy with life.
- b. I work as a receptionist and I am very happy with my life.
The inference does not arise.

In contrast to these examples, the ones in (232) show an inference that remains even if the trigger, in this case the verb *to eat*, is substituted by another form that is semantically equivalent:

- (232) a. Lola ate a strawberry.
Inference = Lola ate something.
- b. Lola put a strawberry into her mouth, chew it and swallowed it.
The inference still arises.

When a meaning is detachable, it is also said that it is *conventional* because it is not simply derived by means of compositional mechanisms or pragmatic reasoning either, but rather associated to a trigger by mere convention.

6.2.1.2 Reinforceability

A content conveyed by the utterance of a sentence is said to be reinforceable if the content can be stated explicitly without causing redundancy.

For example, consider the inference conveyed by B's answer to A in the following dialogue:

- (233) A: Did Sally attend the meeting?
 B: Unfortunately her son was sick.
Inference of B = She did not attend the meeting.

This inference is explicitly stated by B in this other dialogue:

- (234) A: Did Sally attend the meeting?
 B: Unfortunately her son was sick and she didn't go to the meeting.

The felicity of B's answer above contrasts with the unacceptability of (236), which states explicitly the inference in (235):

- (235) John has a dog.
Inference = John has a pet.
 (236) #John has a dog and he has a pet.

Therefore, we can say that the inference in (233) is reinforceable whereas the inference in (235) is not.

6.2.1.3 Defeasibility

A content conveyed by the utterance of a sentence is said to be defeasible if the content can be subject to cancelation or suspension without causing the sentence to be incoherent. Cancelation happens when the speaker uttering the sentence explicitly commits herself to the falsity of the proposition corresponding to the content. Suspension is when the speaker simply does not commit to the truth or falsity of the proposition. The following examples illustrate an inference that can be canceled or suspended:

- (237) Did Sally attend the meeting?
 a. Unfortunately her son was sick.
Inference = She did not attend the meeting.
 b. Unfortunately, her son got sick. Luckily, she still managed to be in the meeting. (Cancelation)
 c. Unfortunately, her son got sick, so she probably didn't go. (Suspension)

In contrast, the following examples show an inference that creates oddity when canceled or suspended:

- (238) a. Mafalda regretted she didn't do her homework.
Inference = Mafalda didn't do her homework.
 b. #Mafalda regretted she didn't do her homework. Luckily, she did it. (Cancellation)
 c. #Mafalda regretted that didn't do her homework. She probably didn't do it. (Suspension)

Therefore, we say that the inference in (237) is defeasible whereas the inference in (238) is not.

6.2.1.4 At-issueness

There is not a unique and simple definition of what at-issue content is (works like Roberts, 1996; Abbott, 2000; Potts, 2005; Roberts et al., 2009; Simons et al., 2011, illustrate the diversity of definitions). The way Simons et al. (2011) propose to define it is in terms of the concept of Question Under Discussion (QUD). According to Roberts (1996), the QUD corresponds to the current discourse topic in a conversation. It is an implicit question in the discourse which utterances constituting conversational moves attempt to resolve. For example, an utterance of the sentence *Lolita wants to go to ballet school* could be a felicitous attempt to answer the QUD that can be formulated in words as *what does Lolita want?* When a proposition conveyed by an utterance attempts to address the QUD, we say that this proposition is at-issue.

Sometimes, utterances can also convey information that is not really relevant to the QUD. For example, the sentence *Lolita, who is not even seven years old, wants to go to ballet school* addresses the question *what does Lolita want?* However, the parenthetical part of the sentence, *who is not even seven years old*, does not contribute in any way an answer to this question. Therefore we say that the proposition corresponding to the parenthetical is not-at-issue.

Several tests have been proposed to identify whether a content is at-issue (see Tonhauser, 2011, for a complete battery). The most commonly used test inquires whether the content is susceptible to direct denial. The idea is that, if a proposition can resist a dissent followed by an utterance conveying a proposition that is alternative to the one denied, then the

first proposition can be considered at-issue content. For example, in (239), the inference that Lula likes John is successfully denied by B, who also provides a subsequent opposite statement:

- (239) A: Lula likes Marta and John
Inference = Lula likes John.
 B: That's false! Lula doesn't like John at all.

Contrary to (239), the following dialogue shows an inference that cannot be considered at-issue content because its denial creates oddity:

- (240) A: It was Lola who broke the bicycle.
Inference = Someone broke the bicycle.
 B: #Not true! No one broke the bicycle!

Simons et al. (2011) have proposed that at-issueness is a relevant property to determining another meaning property, that is to say, whether a meaning has the potential to project.

6.2.1.5 Projectivity

A content conveyed by the utterance of a sentence is said to be projective if it holds even when the trigger of the content occurs under the scope of sentential operators such as negation, antecedent of conditional or modals. The following sentences illustrate a projective inference:

- (241) a. It was Lola who stole the cake.
Inference = Someone stole the cake.
 b. It wasn't Lola who stole the cake. (Negation)
 The inference survives.
 c. If it was Lola who stole the cake, then we can ask her to bring another one. (Antecedent of a conditional)
 The inference survives.
 d. Maybe it was Lola who stole the cake. (Epistemic Modal)
 The inference survives.

In contrast, the following sentences illustrate a non-projective inference:

- (242) a. Carmen ate the cake.
Inference = Carmen ate something.

- b. Carmen didn't eat the cake. (Negation)
The inference does not survive.
- c. If Carmen ate the cake, then we can ask her to bring another one. (Antecedent of a conditional)
The inference does not survive.
- d. Maybe Carmen ate the cake. (Epistemic Modal)
The inference does not survive.

Simons et al. (2011) have proposed that projection is inversely correlated with at-issueness. In particular, they hypothesize that only those contents which are not at-issue have the potential to project. The idea is that only these types of meanings survive under the scope of sentential operators because these operators only affect those propositions that are part of the main point of the utterances, i.e., what addresses the QUD.³

6.2.2 Meaning ontology

The five meaning types that are characterized next are entailments, pre-suppositions, conversational implicatures, conventional implicatures, and idiomatic meanings. For each type I provide a definition, some paradigmatic examples, the relevant bibliography, and, crucially, a discussion about their meaning properties.

6.2.2.1 Entailments

I start this subsection remarking that the characterization of entailments I provide here only aims to cover classic entailments. Over the last few years, other types of meanings, like Potts's (2005) conversational implicatures and Horn's (2002) assertorically inert meanings have also

³The relevance of being or not being a projective meaning has been extensively discussed in the literature (e.g. Stalnaker, 1973; Karttunen, 1974; Lewis, 1979; Heim, 1983; Van der Sandt, 1992; Geurts, 1999; Potts, 2005). Recent works (e.g. Roberts et al., 2009; Simons et al., 2011; Tonhauser et al., 2013) have taken this property as a point of departure for a reclassification of different types of meanings, including some of those that I discuss in the coming subsection. This new taxonomy is an enlightening proposal. For example, it can explain why different types of contents, according to the "traditional" meaning ontology, have properties in common, and why not all the examples of a certain type have the properties that are expected to show up as examples of that type. Despite the value of this reclassification, I will not discuss it here because it does not directly contribute to a better understanding of the meanings of weak definite sentences. Instead, I simply adopt the well-known meaning taxonomy.

been analyzed as entailments despite the fact that they certainly behave differently from the classic ones, for example, in at-issueness, projectivity, and detachability.

A classic entailment (E) is a proposition which is a logically necessary consequence of another proposition. In other words, if a proposition p entails a proposition q , then whenever p is true then q must be true as well. Consequently, falsifying p would falsify q . The following example illustrates this type of meanings:

- (243) Lula loves Marta and John.
E = Lula loves Marta

Entailments are non-detachable meanings, as shown by the test in (244). If their triggers are substituted by others semantically equivalent, the entailments still arise:

- (244) a. Lula loves Marta and John.
E = Lula loves John.
b. Lula not only loves Marta but also John.
E arises.

Entailments are not reinforceable either. That is why the second sentence of the following example, which states explicitly one of the entailments derived from the first sentence, sounds odd:

- (245) # Lula loves Marta and John. In fact, Lula loves Marta.

Entailments are not defeasible meanings either, as the following odd sentences illustrate:

- (246) a. #Lula loves Marta and John but he doesn't love Marta.
(Cancellation)
b. #Lula loves Marta and John and maybe he loves Marta.
(Suspension)

On the other hand, the following sentences show that entailments can be directly denied. This is evidence that this type of meaning involves at-issue content:

- (247) A: Lula loves Marta and John.
B: That's false! Lula only loves John.

Correlatively, entailments do not survive when their triggers are under the scope of sentential operators. This reveals that these inferences are not projective:

- (248) a. Lula loves Marta .
 E = Lula loves someone.
 b. Lula doesn't love Marta (Negation)
 E does not survive
 c. If Lula loves Marta, he will suffer (Antecedent of a conditional)
 E does not survive
 d. Maybe Lula loves Marta (Epistemic modal)
 E does not survive

In sum, entailments are non-detachable, non-reinforceable, non-defeasible, at-issue, and non-projective meanings.

6.2.2.2 Presuppositions

A presupposition (P) is a proposition which needs to be taken for granted in order for another proposition to receive a truth-value. For example, the main proposition corresponding to the following sentence can only be true or false if it is true that the Netherlands used to sell tulips to Namibia:

- (249) The Netherlands has stopped selling tulips to Namibia.
 P = The Netherlands used to sell tulips to Namibia.

Presupposition is a phenomenon that has received a lot of attention over the past five decades (e.g. Stalnaker, 1973; Karttunen, 1973; Gazdar, 1979; Soames, 1979; Heim, 1983; Van der Sandt, 1992; Zeevat, 1992; Chierchia, 1995; Horn, 1996; Geurts, 1998; Abbott, 2000; Beaver, 2001; von Stechow, 2004; Kripke, 2009).

Some presuppositions are detachable but some others are not. For example, although both sentences in (250) express the truth-conditional content, only (250a) triggers a presupposition. In contrast, both sentences in (251) express the same meaning and trigger the same presupposition.

- (250) a. It was Lula who broke the bike.
 P = Someone broke the bike.

- b. Lula broke the bike.
P does not arise.
- (251) a. The Netherlands has stopped selling tulips to Namibia.
P = The Netherlands used to sell tulips to Namibia.
- b. The Netherlands has ceased to sell tulips to Namibia.
P = The Netherlands used to sell tulips to Namibia.

Presuppositions are non-reinforceable meanings:

- (252) #The Netherlands has stopped selling tulips to Namibia. In fact,
The Netherlands used to sell tulips to Namibia.

Likewise, Ps cannot be defeated:

- (253) a. #The Netherlands has stopped selling tulips to Namibia.
Indeed, The Netherlands has never exported tulips. (Cancellation)
- b. #The Netherlands has stopped selling tulips to Namibia. I
am not sure that The Netherlands has ever exported tulips
to Namibia. (Suspension)

On the other hand, presuppositions cannot be denied directly, which suggests that they are not at-issue meanings:

- (254) A: The Netherlands has stopped selling tulips to Namibia
B: #That's not true. The Netherlands never sold tulips to Namibia.

Presuppositions project under the scope of sentential operators:

- (255) a. The Netherlands has not stopped selling tulips to Namibia.
(Negation)
P survives.
- b. If the Netherlands has stopped selling tulips to Namibia, then
France will probably try to sell them roses. (Antecedent of
conditional)
P survives.
- c. Maybe the Netherlands has not stopped selling tulips to
Namibia. (Epistemic Modal)
P survives.

In sum, presuppositions are non-reinforceable, non-defeasible, at-issue and non-projective meanings. Some of them are detachable but some others are not.

6.2.2.3 Conversational Implicatures

A conversational implicature (ConI) is an inference derived from the utterance of a sentence by virtue of a number of pragmatic principles, which guide the way speakers behave in a normal conversation. The following dialogue illustrates the phenomenon:

- (256) A: Is Lola going to buy a house this year?
 B: Unfortunately, she just lost her job.
 ConI = Lola will not buy a house this year.

According to Grice's (1975) seminal work on implicatures, the point of departure of the pragmatic reasoning that participants of a conversation do when they derive a ConI is the following principle:

- (257) *Grice (1975)'s The Cooperative Principle.*
 Make your contribution such as required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged.

Grice subdivides the principle in nine maxims addressed to speakers, which I present here in a simplified version (due to Huang, 2007):

- (258) *The maxim of Quality.*
 Try to make your contribution one that is true, specifically:
 a. Do not say what you believe to be false.
 b. Do not say that for which you lack adequate evidence.
- (259) *The maxim of Quantity*
 a. Make your contribution as informative as is required for the current purposes of the exchange.
 b. Do not make your contribution more informative than is required.
- (260) *The maxim of Relation/Relevance*
 Make your contribution relevant.

(261) *The maxim of Manner:*

- a. Avoid obscurity.
- b. Avoid ambiguity.
- c. Be brief.
- d. Be orderly.

To give an example of how the Cooperative Principle and the maxims intervene in the calculation of ConIs, let me paraphrase the reasoning that addressee B in (256) would have had in order to derive the ConI:

(262) A: Is Lola going to buy a house this year?

B: Unfortunately, she just lost her job.

B's Reasoning:

- i. A is following the conversational maxim of relevance.
- ii. His remark would not be relevant unless the fact that Lola lost her job is relevant to whether or not she will buy a house.
- iii. When someone loses his job usually he does not invest money in expensive goods such as houses.
- iv. If Lola is not investing money in expensive goods because she lost her job then it is very unlikely that she is planning to buy a house this year.
- v. A assumes I will reason in this way, and has not said anything to stop me from doing so.
- vi. In conclusion, A intends to convey that Lola will not buy a house this year.

ConI = Lola will not buy a house this year.

Grice's maxims have been revised and reduced by some other authors, for example, Levinson (2000). He replaces the maxims with three principles: the Quantity, Informativeness, and Manner heuristics, which I present in (263) in a simplified version (also due to Huang, 2007). Notice that each of these principles includes specifications for both the speaker and the addressee:

(263) Levinson's (2000) principles

- a. *Quantity principle.*

Speaker: Do not say less than is required (bearing the Informativeness principle in mind).

Addressee: What is not said is not the case.

b. *Informativeness principle.*

Speaker: Do not say more than is required (bearing the Quantity principle in mind).

Addressee: What is generally said is stereotypical and specifically exemplified.

c. *Manner principle.*

Speaker: Do not use a marked expression without reason.

Addressee: What is said in a marked way is not unmarked.

In Levinson's system, the ConI of the dialogue in (256) would be the result of B obeying the Informativeness principle. B infers that Lola will not be able to buy any house this year because, typically, when someone does not have a job, he cannot buy expensive goods.

ConIs have been studied by a great number of authors (e.g. McCawley, 1978; Gazdar, 1979; Sadock, 1978; Hirschberg, 1985; Bach, 1994; Davis, 1998; Carston, 2004; Sauerland, 2004b; Bach, 2006; Geurts, 2009, 2010; Karttunen, 1975; Franke, 2011; Chierchia et al., 2012). One of the reasons ConIs have raised so much interest is because, although they all share some properties, they also differ in some fundamental respects. Let me elaborate.

Apart from calculability, ConIs display other two characteristic properties. They are reinforceable (264) and defeasible (265) meanings:

(264) A: Is Lola going to buy a house this year?

B: Unfortunately, she just lost her job so she will not buy any house this year.

(265) a. A: Is Lola going to buy a house this year?

B: Unfortunately, she just lost her job. However she will still buy a house this year. (Cancellation)

b. A: Is Lola going to buy a house this year?

B: Unfortunately, she just lost her job so she might not be able to buy a house this year. (Suspension)

In contrast, a property which not every ConI exhibits is detachability. For example, the ConI in (266), which is due to the intervention of Levinson's Informativeness principle, is detachable. In contrast, the ConI in (256) (repeated in (267)) is not:

- (266) a. Lola had a drink.
 ConI = Lola had an alcoholic beverage.
 b. Lola had a beverage.
 ConI does not necessarily arise.
- (267) a. A: Is Lola going to buy a house this year?
 B: Unfortunately, she just lost her job.
 ConI = Lola will not be able to buy any house this year.
 b. A: Is Lola going to buy a house this year?
 B: Regretfully, she just became unemployed.
 ConI still arises.

Whether or not a ConI is detachable correlates with how it is generated. The ConI in (267) is the result of a pragmatic reasoning triggered by the truth-conditional content of the sentence. As such, it will arise independently of the form of the sentence as long as it entails the same content. In contrast, the reasoning which give rise to the ConI in (266) also depends on the form of the sentence. Version (266a) activates the reasoning because in the daily use of language the word *drink* has been devoted to contexts involving alcoholic beverages. Version (266b) does not give rise to that implicature because the word *beverage* is not associated with this stereotype.⁴

Let me now discuss at-issueness. It is unclear whether or not ConIs display this property. To illustrate the problem, consider again the ConI in (256) (repeated in (268)). In principle, this ConI should be considered at-issue given that it is precisely the implicature which resolves the QUD, in this case presented as an explicit question:

- (268) A: Is Lola going to buy a house this year?
 B: Unfortunately, she just lost her job.
 ConI = Lola will not buy any house this year.

However, if the deniability test is applied to this implicature, the resulting sentence is incoherent:

⁴It is important to remark here that ConIs like the one in (266), although involving conventionality, have their occurrence still depending on a pragmatic reasoning which can always be canceled (e.g. *Lola had a drink. She had a soda*). This characteristic, as shown in 6.2.3, crucially differentiates these implicatures from two other types of meanings also involving conventionality, namely, conventional implicatures and idiomatic meanings.

- (269) A: Is Lola going to buy a house this year?
 B: Unfortunately, she just lost her job.
 C: #That's not true! She will buy a house this year!

Determining whether or not ConIs are at-issue meanings is difficult and so it is establishing whether or not they are able to project (see Kadmon, 2001; Simons, 2004; Roberts et al., 2009, for discussion). In fact, the general question whether ConIs can at all be embedded has caused a lot of controversy given that it calls into question the initial assumption that ConIs are the results of pragmatic reasoning and have nothing to do with compositionality (see Recanati, 2003; Sauerland, 2004a; Geurts and Pouscoulous, 2009; Geurts, 2010; Chierchia et al., 2012, for discussion). This debate is beyond the scope of this dissertation and therefore I do not go into details. The only comment I would like to make here is that, from the Gricean point of view, the idea that ConIs can survive the scope of sentential operations does not make much sense because ConIs are triggered by utterances of sentences (Geurts, 2010). In other words, the idea that the utterance of a sentence can be under the scope of operators which by definition only affect the domain of sentences is theoretically incoherent.

Having said this, and, for the sake of completion, let me apply the projectivity test to a couple of ConIs. In the case of the implicature in (256), putting aside the fact that sentences with negation, antecedent of conditional and modals are not fully felicitous answers to A's question, the projective test is negative:

- (270) A: Is Lola going to buy a house this year?
 B: Unfortunately, she just lost her job.
 ConI = Lola will not be able to buy any house this year.
- a. B: Luckily, she didn't lose her job in the last reorganization.
 (Negation)
 ConI does not survive.
 - b. B: If she is losing her job, I don't know whether she will be able to get a loan. (Antecedent of conditional)
 ConI does not survive.
 - c. B: Maybe she just lost her job. (Epistemic modal)
 ConI does not survive.

The following example also reveals non-projectivity:

- (271) a. Some of my friends came to the party.
 ConI= Not all my friends came to the party.
- b. It is not the case that some of my friends came to the party.
 (Negation)
 ConI does not survive.
- c. If some of my friends came to the party, their girlfriends
 probably were disappointed. (Antecedent of conditional)
 ConI does not survive.
- d. Maybe some of my friends came to the party. (Epistemic
 modal)
 ConI does not survive.

In sum, ConIs are characteristically calculable, reinforceable and defeasible meanings; some of them are also detachable but some others are not. Also, although it is difficult to determine whether or not ConIs are at-issue or projective, the evidence presented so far suggests that they are not.

6.2.2.4 Conventional Implicatures

The traditional definition of conventional implicature (CI), which also goes back to Grice's work, says that it is a type inference that is derived from sentences containing some specific triggers by means of mere convention rather than as the result of compositional mechanisms or pragmatic reasoning (Karttunen and Peters, 1979). An example covered by this definition can be seen in (272) where the CI is triggered by the presence of the conjunction *but*:

- (272) Lola is pretty but smart.
 CI = Surprisingly, Lola is smart in spite of being pretty.

Potts (2005) has substantially revised the notion of CIs. Very briefly, he proposes that CIs, although derived by convention from the presence of some triggers, are entailments. These entailments are of a different type from regular entailments. The main difference between both types is that CI are in the non-at-issue dimension. Pott's proposal brings several important consequences. One of them is that several examples considered paradigmatic cases of CIs before Pott's work (like the inferences triggered by *but*) are no longer treated as such. At the same time, thanks to Potts' proposal, an entirely new set of contents is included in the range of CIs.

An example of Pottsonian CIs is the appositive content conveyed by the following sentence:

- (273) Lola, who dressed up as a Playboy Bunny for Halloween, just won the Nobel Prize in physics.

CI = Lola dressed up as a Playboy Bunny for Halloween.

Both, classic and Pottsonian CIs have been studied by a great number of authors (e.g. Karttunen and Peters, 1979; Rieber, 1997; Francescotti, 1995; Bach, 1999; Barker, 2000, 2003; Potts, 2003, 2004, 2007b, 2008; Roberts et al., 2009; Whiting, 2012).

Let us now investigate the inferential properties of CIs. Classic CIs are detachable. In (274), if *but* is substituted by a conjunction with a similar meaning, then the associated CI no longer arises:

- (274) a. Lola is pretty but smart.
CI = It is surprising that Lola is smart in spite of being pretty.
b. Lola is pretty and smart.
CI does not arise.

Pottsonian CIs are also detachable. For example, the proposition corresponding to the apposition in (275a) is no longer a CI, when the apposition is replaced by a non-appositive version of the clause (275b). In this case, the CIs become an entailment:

- (275) a. Lola, who dressed up as a Playboy Bunny for Halloween, just won the Nobel Prize in physics.
CI = Lola dressed up as a Playboy Bunny for Halloween.
b. Lola dressed up as a Playboy Bunny for Halloween and won the Nobel Prize in physics.
E = Lola dressed up as a Playboy Bunny for Halloween.

As the following examples show, both classic (276) and Pottsonian (277) CIs are non-reinforceable meanings:

- (276) Lola is pretty but smart. #In fact, it's surprising that Lola is smart in spite of being pretty.
(277) Lola, who dressed up as a Playboy Bunny for Halloween, just won the Nobel Prize in physics. #In fact, she dressed up as a Playboy Bunny for Halloween.

Both classic (279) and Pottisian (279) CIs are not defeasible meanings either:

- (278) a. #Lola is pretty but smart although it's not surprising that Lola is smart in spite of being pretty. (Cancellation)
 b. Lola is pretty but smart. #Perhaps it's surprising that Lola is smart in spite of being pretty. (Suspension)
- (279) a. #Lola, who dressed up as a Playboy Bunny for Halloween, just won the Nobel Prize in physics although she didn't dress up as a Playboy Bunny for Halloween. (Cancellation)
 b. Lola, who dressed up as a Playboy Bunny for Halloween, just won the Nobel Prize in physics. #Perhaps she didn't dress up as a Playboy Bunny for Halloween. (Suspension)

Neither classic nor Pottisian CIs can be directly denied:

- (280) A: Lola is pretty but smart.
 B: #That's false! It's not surprising that Lola is smart in spite of being pretty.
- (281) A: Lola, who dressed up as a Playboy Bunny for Halloween, just won the Nobel Prize in physics.
 B: #That's not true! She always dresses up as Superman for Halloween. She would never wear a Playboy Bunny costume.

Both classic and Pottisian CIs project under the scope of operators:

- (282) a. Lola is pretty but smart.
 CI = It is surprising that Lola is smart in spite of being pretty.
 b. It is not the case that Lola is pretty but smart. (Negation)
 CI survives.
 c. If Lola is pretty but smart, then she deserves to win the Nobel Prize in physics. (Antecedent of conditional)
 CI survives.
 d. Perhaps Lola is pretty but smart. (Epistemic Modal)
 CI survives.
- (283) a. Lola, who dressed up as a Playboy Bunny for Halloween, just won the Nobel Prize in physics.
 CI = Lola dressed up as a Playboy Bunny for Halloween.

- b. It is not true that Lola, who dressed up as a Playboy Bunny for Halloween, just won the Nobel Prize in physics. (Negation)
CI survives.
- c. If Lola, who dressed up as a Playboy Bunny for Halloween, just won the Nobel Prize in physics, then we can celebrate. (Antecedent of a conditional)
CI survives.
- d. Maybe Lola, who dressed up as a Playboy Bunny for Halloween, just won the Nobel Prize in physics. (Epistemic Modal)
CI survives

In sum, both classic and Pottsian CIs are detachable, non-reinforceable, non-defeasible, not-at-issue and projective meanings.

6.2.2.5 Idiomatic Meanings

The meaning of an expression is idiomatic when it is associated with the expression by mere convention rather than as the result of the straightforward composition of the meanings of words constituting the expression. Crucially, an idiomatic meaning (IM) replaces the literal meaning of the expression. For example, in sentence (284), none of its constituents has to do with Peter dying although the sentence is only true if Peter died and not if he kicked a bucket:⁵

- (284) Peter kicked the bucket.
IM= Peter died.

⁵Here I would like to acknowledge Nunberg et al.'s (1994) distinction between two types of idioms. The first type, *idiomatic phrases*, includes expressions like *to kick the bucket*, which the authors qualify as fully conventional in the sense that they do not seem to distribute their meanings among their components (e.g. the whole VP *to kick the bucket* is associated with the meaning 'to die'). The second type of idiom, *idiomatically combining expressions*, includes expressions like *to spill the beans* ('divulge information') whose meaning, although still associated with the expressions by convention, is distributed among their parts (i.e. *to spill* means 'divulge' and *the beans* means 'information'). The possible compositionality of idioms has been discussed by authors like Espinal and Mateu (2010) and Everaert (2010). I would not disagree with the possibility that some idioms preserve some degree of compositionality. However, I do think that there is no doubt that there is a total replacement of literal meanings by idiomatic meanings (probably due to some metaphoric mechanism) so that only the latter hold in every case. In that sense, Nunberg et al.'s (1994) distinction is not so relevant to the characterization of idioms in the present subsection.

- (285) Peter finally laid his cards on the table.
 IM= Peter finally revealed his secret.

Idiomatic meanings, as the following examples show, are detachable (286), non-reinforceable (287), and non-defeasible (288) content:

- (286) a. Peter kicked the bucket.
 IM = Peter died.
 b. Peter kicked the container.
 IM does not arise.
- (287) #Peter kicked the bucket and died.
- (288) a. #Peter kicked the bucket but he is still alive. (Cancellation)
 b. #Peter kicked the bucket but maybe he didn't die. (Suspension)

On the other hand, idiomatic meanings can be denied, which suggest that they are at-issue meanings:

- (289) A: Peter kicked the bucket.
 B: That not true! He is still alive.

As expected given their at-issue nature, idiomatic meanings do not project:

- (290) a. Peter kicked the bucket.
 IM= Peter died.
 b. Peter didn't kick the bucket. (Negation)
 IM does not survive.
 c. If Peter kicked the bucket, his dog will be very sad. (Antecedent of conditional)
 IM does not survive.
 d. Maybe Peter kicked the bucket. (Epistemic modal)
 IM does not survive.

In sum, idiomatic meanings are detachable, non-reinforceable, non-defeasible, at-issue, and non-projective meanings. IMs have been studied by a large number of authors (e.g. Gibbs, 1980; Fillmore et al., 1988; Coopmans and Everaert, 1989; Everaert, 1989; Gibbs and O'Brien, 1990; Gibbs, 1992; Everaert, 1992; Nunberg et al., 1994; Everaert et al., 1995; Cacciari and

Glucksberg, 1991; Vega-Moreno, 2001; McGinnis, 2002; Vega-Moreno, 2003; Glasbey, 2003; Espinal and Mateu, 2010). However, to my knowledge, no one before has explored their meaning properties as has been done in this section. This assessment allows us to see how idiomatic meanings relate to other types of meaning.

6.2.3 Summary of tests and meaning ontology

Table 6.1 summarizes and compares the properties of entailments (E), presuppositions (P), conversational implicatures (ConI), conventional implicatures (CI), and idiomatic meanings (IM) discussed in the present section.

Type of meanings	E	P	ConI	CI	IM
Detachability	×	✓/×	✓/×	✓	✓
Reinforceability	×	×	✓	×	×
Defeasibility	×	×	✓	×	×
At-issueness	✓	×	×	×	✓
Projection	×	✓	×	✓	×

TABLE 6.1: Properties of different types of meanings.

With this panorama in mind, in the coming sections I proceed to examine the nature of literal and enriched meanings of weak definite and bare singular sentences. The aim is to determine whether both LM and EM qualify as truth-conditional content. The combination of inferential properties in Table 6.1 will help me to do so.

6.3 The nature of literal meanings

Before I start examining LMs, I would like to explain why I discuss sentences with weak definites and bare singulars in parallel in the present chapter even when the rest of the dissertation focuses on weak definites only. One important reason is of course that both types of nominals display enriched meanings. Discussing both constructions in parallel is especially helpful to determine the nature of EMs because this allow us to see more clearly whether or not these types of contents display the properties discussed in the previous section. Recall that weak definites

can always be reinterpreted as specific definites when something in the context blocks the possibility of the definite to be interpreted weakly. The examples in (291) illustrate this by means of the sloppy reading of the definite *the store* as opposed to the strict reading of *the old store*, which is modified by an individual-level adjective. Recall that, as seen in Chapter 4, this type of adjectives are incompatible with kind-reference and therefore block the weak reading of the definites. Crucially, blocking weak readings forces a regular, specific interpretation of the definites, but enable the sentences embedding the definites to remain grammatical:

- (291) a. Lola went to the store and Marco did too.
 ‘Lola and Marco could have gone to different stores’
 b. Lola went to #the old store and Marco did too.⁶
 ‘Lola and Marco must have gone to the same store’

In contrast to weak definites, bare singulars are not ambiguous between a weak reading and another reading. Therefore, sentences embedding bare singulars turn ungrammatical when they include an element blocking the weak reading, like an individual-level adjective:

- (292) a. Lola went to jail.
 b. *Lola went to old jail.

In the rest of this chapter, I exploit this particular difference between bare singulars and weak definites to see more clearly whether or not LMs and, crucially, EMs display the meaning properties discussed before.

6.3.1 Properties of literal meanings

The first matter to discuss here is whether LMs display detachability, which, as seen before, should be tested by substituting the triggers of the LMs by other words semantically equivalent. The triggers in this case are weak definites and bare singulars, thus, to implement the tests, it should suffice to substitute the nouns. Before I do so, let me recall one characteristic of weak definites and bare singulars that might be a problem for this: not every noun can occur in weak definite and bare singular combinations. When the nouns heading weak definites are substituted by others semantically equivalent, the definites can not necessarily be interpreted as weak:

⁶Recall that the symbol #next to the definite article indicates that the definite in question does not have a weak reading.

- (293) a. Marta went to the store.
 b. Marta went to #the boutique/#the place where things are kept for sale.

When this substitution happens in bare singulars, the embedding sentences turn ungrammatical in most of the cases (294b) unless a determiner is added (294c):

- (294) a. Theo went to church.
 b. *Theo went to cathedral/house of God.
 c. Theo went to a cathedral/a house of God.

Given these lexical restrictions, it is worth asking whether or not revealing results are obtained from the application of the detachability test to LMs. Once the test is applied, we are no longer dealing with weak definites or bare singulars but rather with specific definites and non-bare nominals, respectively. Only if it is not a problem that with the application of the detachability test the target constructions are no longer present anymore, the test can be considered valid.

According to this test, LMs are not detachable meanings, as they survive after substitution:

- (295) a. Marta went to the store.
 LM = Marta went to a store.
 b. Marta went to #the boutique/#the place where things are kept for sale.
 LM holds
- (296) a. Theo went to church.
 LM = Theo went to a church
 b. Theo went to *(the/a) cathedral/ *(the/a) house of God.
 LM holds

The second property to discuss here is reinforceability. As the following examples show, LMs do not seem to display this property and therefore they cause redundancy when they are stated explicitly:

- (297) #Marta went to the store and went to a store in the neighborhood.
 (298) #Marta went to church and went to a church in the neighborhood.

LMs are not defeasible either. Adding a continuation that suspends or cancels the truth of this content causes oddity as well:

- (299) a. #Marta went to the store but I am not sure that she went to a store. (Suspension)
 b. #Marta went to the store but she didn't go to a store. (Cancellation)
- (300) a. #Marta went to church but I am not sure that she went to a church. (Suspension)
 b. #Marta went to church but she didn't go to a church.⁷ (Cancellation)

LMs are susceptible to direct negation, which suggest that they are at-issue meanings:

- (301) A: Marta called the doctor yesterday.
 B: That's false! She called a friend not a doctor.
- (302) A: Lula went to church yesterday.
 B: That's false! She went to a Buddhist temple.

Correlatively, LMs do not project if their triggers are embedded under the scope of operators:

- (303) a. Marta went to the store.
 LM = Marta went to a store.
- b. Marta didn't go to the store. (Negation)
 LM does not survive.
- c. If Marta went to the store this morning, I won't go tomorrow. (Antecedent of conditional)
 LM does not survive.
- d. Maybe Marta went to the store. (Epistemic modal)
 LM does not survive.

⁷Notice that this sentence does not sound so odd if it describes, for example, a situation in which Lola attended Mass in the garden of a house instead of in a church because the church in which the mass should have taken place was burned down. In general, defeating the literal meaning of some bare singular and weak definite sentences in this way is not impossible. However, I believe that this is a marginal phenomenon.

- (304) a. Marta went to church.
 LM = Marta went to a church.
 b. Marta didn't go to church. (Negation)
 LM does not survive.
 c. If Marta went to church this morning, I will go tomorrow.
 (Antecedent of conditional)
 LM does not survive.
 d. Maybe Marta went to church. (Epistemic modal)
 LM does not survive.

In conclusion, LMs are non-detachable, non-reinforceable, non-defeasible, at-issue and non-projective meanings.

6.3.2 Literal meanings are entailments

Based on the properties of LMs discussed in the previous section, Table 6.2 compares LM with the other meaning types discussed in 6.2.2:

Type of meanings	E	P	ConI	CI	IM	LM
Detachability	×	✓/×	✓/×	✓	✓	×
Reinforceability	×	×	✓	×	×	×
Defeasibility	×	×	✓	×	×	×
At-issueness	✓	×	×	×	✓	✓
Projection	×	✓	×	✓	×	×

TABLE 6.2: Properties of LMs compared to other types of meanings.

From this comparison it can be concluded that LMs behave as regular entailments. In fact, they satisfy the definition of entailments I provide in 6.2.2.1: they must be true in order for the main proposition of the corresponding sentence to be true.

It is important to remark that, although I expected LMs to behave as regular entailments (putting idiomatic sentences aside, what a sentence literally means normally is truth-conditional), it was far from trivial to submit LMs to the whole battery of tests. One reason why this was important is to dismiss the possibility that LMs behave as a peculiar type of entailments, namely, Horn's (2002) assertorically inert entailments (AIEs).

AIEs, although part of the main proposition conveyed by a sentence, are somehow outside the scope of what the sentence is really about. An example of AIE is the meaning of sentences with the approximative adverb *almost*, illustrated in (305). According to Sevi (1998), the meaning of these sentences comprises both a *proximal* proposition of the type ‘*x* came close to P’, and a *polar* one of the type ‘*x* did not P’. The polar proposition is an AIE:

- (305) Gore almost won the election.
 Proximal component = Gore came close to winning.
 Polar component (AIE) = Gore did not win.

AIEs are similar to regular entailments in that they are non-detachable (306), non-reinforceable (307), and non-defeasible (308) meanings:

- (306) a. Gore almost won the election.
 AIE arises
 b. Gore came close to winning the election.
 AIE arises
- (307) #Gore almost won the election but he didn’t win it.
- (308) a. #Gore almost won the election and maybe he won. (Suspension)
 b. #Gore almost won the election but he won. (Cancellation)

However, AIEs differ from regular entailments in that they are not susceptible to direct negation (309), which suggests that they are not at-issue meanings.

- (309) A: Gore almost won the election.
 B: That is not true! #He won.

Correlatively, AIEs seem to be able to project (310):

- (310) a. Gore almost won the election.
 AIE = Gore did not win.
 b. It is not the case that Gore almost won the election. (Negation)
 AIE survives
 c. If Gore almost won the election, he might faint when he finds out. (Antecedent of a conditional)
 AIE survives

- d. Maybe Gore almost won the election. (Epistemic modal)
AIE survives

The possibility that LMs had something in common with AIEs was suggested to me to account for the fact that, although LMs are entailed by the sentences, they do not seem to be what the sentences are really about. In the end, when saying that Lu is in jail, what we really want to express is that she is imprisoned and not that she is located in a jail. Nevertheless, the tests have shown that, at least so far, LMs behave like regular at-issue entailments.

6.4 The nature of enriched meanings

Before I start examining the meaning properties of EMs, I would like to mention two other facts about EMs, which will gain relevance throughout the discussion. The first one is that the EM and the LM of a sentence are always related in such a way that the EM implicates the LM. For example, consider the bare singular sentence *Lu is in jail*. The proposition corresponding to the EM, that Lu is to serve a sentence, can only be true if the proposition corresponding to the LMs is true as well, namely, that Lu in fact is situated in a jail. Similarly, the proposition corresponding to the EM of the sentence *Lola called the doctor* –that Lola called to ask for medical assistance– can only be true if the proposition corresponding to the LM –that she called a doctor– is true as well.

The second fact is that a EM typically involve the characteristic purpose of the object designated by the weak definite or bare singular in question. For example, the EM of *Lola went to the store* is that Lola went to buy some groceries, and, in fact, the purpose of stores is to sell groceries. Similarly, the EM of *Lu is in jail* is that she is imprisoned, and the purpose of jails is to keep prisoners. In Chapter 5, the lexical semantics of weak nouns have been discussed and one of the main conclusion has been that these nouns designate objects associated with stereotypical purposes of use. Hence, it is possible to say that EMs are grounded in the lexical semantics of the nouns.

Related to this, the last fact about EMs I want to mention here is the implication of the way I paraphrase them, which is as tenseless purpose clauses rather than as full sentences with conjugated verbs. For example, the paraphrase of the EM of the sentence *Lola looked in the mirror* is *to see her reflection* and not *Lola saw her reflection*. I opt for the subordinate

clause to capture that a weak definite (or bare singular) sentence conveys that a subject does something (corresponding to the literal meaning) with a purpose (corresponding to the enriched meaning). This purpose might be achieved or not but that is irrelevant to the felicitous use of the sentence. This irrelevance is reflected on the fact that examples as the following ones are possible:

- (311) *Context*: Lola became a vampire mysteriously and she does not know it yet. However, she has already noticed a series of changes on her body and, as she is worried, she decides to go to the doctor. When the doctor asks her what seems to be problem she replies:
Sentence: Something is wrong with me, doctor. For instance, yesterday I looked in the mirror, and I couldn't see my reflection.
- (312) *Context*: Lola walked to her school this morning to take her usually classes but on her way she met a classmate who told her that the school was closed because the teachers are on strike. When she returns home, twenty minutes later, her mother asks her where she has gone and why she returned so quickly. Lola replies:
Sentence: I went to school but the teachers are on strike.

If instead of only conveying the intention of a subject of achieving a purpose, weak definite and bare singular sentences would also convey that the purpose indeed takes place, in which case a full sentence would be a more appropriate paraphrase of EMs, then the sentence in (311) under the weak reading of the definite, and the sentence in (312) would both be infelicitous.

6.4.1 Properties of enriched meanings

The first property to discuss here is again detachability. As discussed in 6.3.1, the test to detect it consists of replacing the noun heading the weak definite or bare singular in question by another one semantically equivalent in order to see if the corresponding EM still holds. However, recall that in 6.3.1 it was also questioned whether the results of this test in fact would provide revealing results given that once the nouns are substituted, weak definites turn specific and bare singulars require a determiner, otherwise they are unacceptable. Thus, in the end, we are no longer dealing with the same type of construction. Only assuming that this is not a problem, we can consider valid the detachability test.

As the following examples show, once the noun heading a weak definite (313) or a bare singular (314) is replaced by another one, the corresponding EM does not necessarily arise. Thus we can conclude that EMs are detachable meanings:

- (313) a. I went to the hospital.
EM = I went to get some medical services.
- b. I went to #the health center/#the clinic/#the sanatorium.
EM does not necessarily arise.
- (314) a. I went to church.
EM = I went to attend Mass.
- b. I went to *(the/a) chapel/ cathedral/ house of Good.
EM does not necessarily arise.

On the other hand, as the following sentences show, EMs are reinforceable meanings and therefore can be stated explicitly without causing redundancy:

- (315) a. I went to the store to do some shopping.
- b. Jason went to the hospital to get some medical services.
- (316) a. Lu is in jail to serve a sentence.
- b. Theo went to church to attend Mass.

In contrast, EMs are not defeasible. Therefore, as the examples below show, adding a continuation that cancels or suspends EMs causes weak definites to be interpreted as specific ones (317) and bare singulars to be unacceptable (318). It is important to remark that, in these examples, the continuations not only include clauses explicitly contradicting the EMs. Crucially, the clauses also state that the reason why the agent interacts with the object designated by the weak definite or bare singular in question is not typical for that object. Thus, for example, sentence (317) not only explicitly cancels that Lola went to do some shopping but that she went to do something typical of a store. In 6.4.2, I will return to this and explain why it is important to add the untypical reason in weak definite and bare singular sentences.

- (317) a. Lola went to #the store but maybe she didn't go to do shopping but to attend a demonstration against violence. (Suspension)

- b. Lola went to #the store but not to do some shopping but to attend a demonstration against violence. (Cancellation)
- (318)
- a. #Lola went to church and maybe she attended Mass. (Suspension)
 - b. #Lola went to church but not to attend Mass but to pick up a friend. (Cancellation)

There is another indirect way to show that EMs are not defeasible. As I explained before, an EM typically involves the characteristic purpose of the object designated by the weak definite or bare singular of the sentence conveying the EM. Crucially, using the sentence in a context in which the purpose of the object is somehow not available creates oddity. Consider the following context and sentence:

- (319) *Context:* Ana and Bert are exploring the attic of their grandmother's house. Suddenly, Bert finds a box full of old newspapers. He takes one of them and starts reading it. Ana sees this and asks Bert what he is doing. Bert replies:
Sentence: I am reading the newspaper.

In this context, the sentence, under the weak reading, sounds odd unless is taken as a joke. Admittedly, the effect is rather subtle and can easily disappear as the weak definite can always be reinterpreted as a specific definite. But now consider what would happen with a bare singular sentence. Consider example (320). In the context of that example, Ana's answer also sounds incoherent unless it is assumed that she is joking:

- (320) *Context:* Ana and Bert are exploring a ghost town in Mexico. Suddenly, Ana discovers that a few feet from where they are standing there is a ruined church, and starts walking towards it. Bert sees this and asks Ana what she is doing. Ana answers:
Sentence: I am going to church.

What examples (319)-(320) have in common is that the purposes of use associated with the objects designated by *the newspaper* and *church* are blocked. An old newspaper cannot fulfill its function, that is to say, to inform about the daily news. Similarly, a ruined church is not a place where somebody can go to attend Mass or to pray. If objects' main purpose of use is blocked, then the EMs associated with the sentences

(i.e. that Bert is attempting to get informed about the daily news, in the newspaper case, and that Ana is going to pray or to attend Mass, in the church case) are also cancelled. The consequence of this cancellation is that these sentences sound incoherent. This shows that EMs are not defeasible meanings.

Let me now evaluate whether or not EMs are at-issue contents. To do so, I first need to recall the implicational relationship between EMs and LMs I showed at the beginning of this subsection. The fact that EMs can only be true if the corresponding LMs are true as well creates a difficulty to apply the deniability test. When we deny a weak definite or a bare singular sentence, the proposition we deny in the first instance is the LM and this automatically defeats the EM. Therefore, we must somehow make sure that the denial only targets the EMs. One way to do so is by adding a continuation to the denial which ensures that the LM still holds and supports the denial of the EM at the same time, as shown in examples (321)-(322). If we accept that the following examples are felicitous, then they show that EMs are, in fact, at-issue:

- (321) A: Lola went to the store.
 B: That's not true. She walked to the Wal-Mart around the corner but only to pick up a friend.
- (322) A: Lu is in jail.
 B: That's not true. It's true that right now she is living in the State Prison but she is living there because she is doing an internship and not because she is serving time.

Let me finally discuss the reaction of EMs to the projectivity test. Due to the same reason the original negation test fails to validly show whether EMs are at-issue meanings, the projection test is problematic. As examples b-d in (323) and (324) show, embedding under the scope of sentential operators inevitably suspends the truth of the propositions corresponding to the LMs, and this suspends the truth of the propositions corresponding to EMs because EMs depend on LMs. Thus, although the projection test shows that EMs do not hold under the scope of operators, we cannot say that this happens for the right reasons, i.e. because the operators affect the EMs as it is expected given their at-issue nature:

- (323) a. Marta went to the store.
 LM= Marta went to a store.

- EM = Marta went to do some shopping.
- b. Marta didn't go to the store. (Negation)
Neither LM nor EM survives.
 - c. If Marta went to the store this morning, I won't go tomorrow.
(Antecedent of conditional)
Neither LM nor EM survives.
 - d. Maybe Marta went to the store. (Epistemic modal)
Neither LM nor EM survives.
- (324)
- a. Marta went to church this morning.
LM = Marta went to a church
EM = Marta went to attend Mass.
 - b. Marta didn't go to church this morning. (Negation)
Neither LM nor EM survives.
 - c. If Marta went to church this morning, she is probably tired now. (Antecedent of conditional)
Neither LM nor EM survives.
 - d. Maybe Marta went to church this morning. (Epistemic modal)
Neither LM nor EM survives.

Although it is not easy to draw conclusions from the application of the projection test, I still believe that EMs should be considered non-projective. If EMs were projective, then we would encounter contradictions in (323b)-(323c) and in (324b)-(324c), or redundancies in (324d) and in (324d). For example, sentence (323b) would mean that Marta did not go to a store and she went to do some shopping; sentence (323c) would mean that Marta went to do some shopping and, if she went to a store, I won't go tomorrow; and sentence (323c) would mean that Marta went to do some shopping and she maybe went to a store. As neither contradiction nor redundancies are the case in these sentences, I can adventure that their EMs do not project.⁸

⁸The weakness in this argument is that one could counter this possibility assuming that EMs do project, but this projection gets suppressed in case it leads to anomalies. This happens with presuppositions like those associated with possessives (e.g. *John's children are ill* presupposes that John has children). These presuppositions project (e.g. *Maybe John's children are ill* still presupposes that John has children) unless there is a contradiction (e.g. in *Maybe John's children do exist!* the presupposition that John has children is contradictory and therefore gets suppressed). As can be

In conclusion, EMs are detachable, reinforceable, non-defeasible, at-issue, and (arguably) non-projective meanings. In the coming section, I discuss the theoretical implications of this behavior.

6.4.2 Enriched meanings are both entailments and conversational implicatures

Based on the meaning properties of EMs, Table 6.3 compares EMs with the other types of contents previously discussed. The main conclusion that can be drawn from this comparison is that EMs cannot be straightforwardly reduced to any other type of meanings. EMs differ from entailments in that the former, unlike the latter, are detachable and reinforceable. EMs differ from presuppositions in that only EMs are reinforceable and at-issue. EMs contrast with conversational implicatures at least in one aspect, that EMs are non-defeasible. EMs cannot be reduced to conventional implicatures either. They are reinforceable and at-issue. Finally, EMs are also different from idiomatic meanings in that only EMs are reinforceable.⁹ Thus, in order for EM to be classified as any of these types of contents, it is necessary to further explain the differences.

Type of meanings	E	P	ConI	CI	IM	LM	EM
Detachability	×	✓/×	✓/×	✓	✓	×	✓
Reinforceability	×	×	✓	×	×	×	✓
Defeasibility	×	×	✓	×	×	×	×
At-issueness	✓	×	×	×	✓	✓	✓
Projection	×	✓	×	✓	×	×	×

TABLE 6.3: Properties of EMs compared to other types of meanings.

Given the problem of trying to reduce EMs to one single type of inference plus a number of empirical and theoretical motivations I provide as

seen, this is parallel to what happens in sentences (323b)-(323d) and (324b)-(324d). Although it is a possibility to treat EMs as projective meanings that get suppressed if oddity is generated, I strongly believe that it is better to treat them as non-projective meanings.

⁹Recall that another difference between IMs and EMs is that whereas IMs replace the literal meaning of idiomatic expressions, EMs are connected to the literal meaning of weak definite or bare singular constructions so that they can only hold if the literal meaning holds.

follows, I propose to treat EMs as being partly entailments and partly conversational implicatures generated due to the intervention of Levinson's Informativeness principle. The idea is that, in a sentence like *Lola went to the store*, what is truth-conditional, along with Lola going to a store, is that Lola went there for a purpose stereotypical of stores. On the other hand, what is conversationally derived is that Lola went there to do shopping, which is, among all the exemplifications of the stereotypical purposes of stores, the most stereotypical according to our world knowledge. In other words, my proposal is that stereotypicality plays twice a role in the interpretation of weak definite and bare singular sentences, once as an entailment (e.g. the reason to go to a store is a stereotypical one), and once as an implicature (e.g. the exemplification of the stereotypical purpose of stores that is the most stereotypical is to do shopping).

Let me clarify the proposal by showing how it is grounded in my theory of weak definites. Recall that, according to the theory, a sentence like *Lola went to the store* denotes the logical form (325b). This logical form corresponds to a non-empty set of events in which Lola, the agent, moved to a location which exemplifies the store kind S , and those events constitute stereotypical usages of S , as the U relation indicates:

- (325) a. Lola went to the store.
 b. $\exists e[\text{Go-to}(e) \wedge \text{Agent}(e) = \text{lola} \wedge R(\text{Loc}(e), S) \wedge U(e, S)]$

The presence of a stereotypical usage relation in the logical form of the sentences has been already motivated in Chapter 5, when I discuss the lexical semantics of the nouns heading weak definites. These nouns (e.g. *hospital*, *store*, *newspaper*) designate objects associated with stereotypical purposes (*to provide medical services*, *to sell goods*, *to inform about the daily news*, respectively). As shown before, EMs typically involve these stereotypical purposes (e.g. the EM of *Lola went to the store* is that Lola went to do shopping).

As mentioned at the beginning of this chapter, the presence of the relation U in the logical form of the sentences is compatible with EMs being truth-conditional. However, to be more precise, this compatibility is only partial. The logical form in (230b) states that Lola is involved in an event that is a stereotypical usage event of the store kind. However, the logical form does not specify that the event involves shopping. This part of the interpretation is a stereotypical exemplification of the stereotypical purpose of stores, which is derived by means of a pragmatic

reasoning supported by a stereotype constructed by our linguistic community as from our world knowledge. In other words, my analysis of weak definite sentences is actually more compatible with EMs being partly entailments and partly conversational implicatures than with EMs being only entailments.

The proposal that one aspect of EMs is truth-conditional whereas the other aspect is conversationally derived explains the combination of meaning properties EMs have. The aspect constituting an entailment is that an event takes place with a purpose stereotypical of the type of object designated by the weak definite or bare singular in question (e.g. in the case of *going to the store*, the event of going to a realization of the store kind). As such, this meaning part is at-issue, non-projective, and non-defeasible content. The aspect that is a I-implicature is the exemplification of the stereotypical purpose associated with the type of object in question (e.g. in the case of *going to the store* the stereotypical the exemplification of the stereotypical purpose associated with stores is to do shopping). Therefore, this meaning part is reinforceable and detachable.¹⁰

Before I conclude, let me provide an important precision about the way I tested defeasibility on EMs in 6.3.1, which needed to wait until now. Recall that in order to test this property, I had to use examples like *Lola went to the store but not to do shopping but to pick up a friend*. In this example, the sentence *Lola went to the store* is followed by a continuation comprising two parts. The first part, *but not to do shopping*, contradicts explicitly the inference that Lola went to do shopping. The second part, *but to pick up a friend*, specifies the reason why Lola went to a store. To pick up a friend is an atypical reason why people go to stores. Without the second part, the continuation would only cancel the most stereotypical exemplification of the stereotypical purpose of stores, namely, to do shopping. As this part is a conversational implicature, according to my proposal, cancelation does not cause the weak definite *the store* to lose its weak reading. Precisely what the atypical reason does, apart from reinforcing the cancelation of the conversational implicature

¹⁰Recall that I-implicatures, in contrast to other types of conversational implicatures, are triggered not only by what is said but also by the way this information is conveyed. Therefore, if the form changes, the implicatures may not arise. In the case of weak definites and bare singulars, when the noun heading the phrases changes, the inference that the designated object is being used for a particular exemplification of the stereotypical usage purpose of the object can disappear.

that Lola went to do shopping, is to cancel the entailment that Lola went to the store for stereotypical purposes of stores (going to pick up a friend is not one of them). Defeating the entailment does cause the weak definite to become a regular, specific definite.

Related to this issue, now it is also possible to see why the sentence *Lola went to the store* accurately describes a situation in which Lola went to a store to buy some milk, vegetables, bread and coffee, but also a situation in which she went to return some beer bottles and get some money back. In contrast, the sentence is not a good summary of a situation in which Lola went to a store to pick up a friend. The explanation is that only in the first two situations a store is being used in a stereotypical way. In contrast, the last situation does not exemplify the stereotype and that contradicts the truth-conditional part of the EM, which is precisely that Lola went to fulfill a stereotypical purpose of stores.

In sum, I propose to treat EMs as being partly entailments, captured by the presence of the stereotypical usage relation U in the logical form of the sentences, and partly I-implicatures, which exemplify these stereotypical usages. This proposal explains the mixed behavior of EMs. Furthermore, the proposal is fully compatible with my theory of weak definites.

6.5 Conclusion

In this chapter I examined the pragmatic-semantic nature of LMs and EMs. To do so, I assessed whether or not they display detachability, reinforceability, defeasibility, at-issueness, and projectivity. Then I compared their behavior with that of entailments, presuppositions, conventional and conversational implicatures, and idiomatic meanings. The main conclusion about LMs is that they are non-detachable, non-reinforceable, non-defeasible, at-issue and non-projective meanings. As such, LMs can be considered regular truth-conditional content. In contrast, the main conclusion regarding EMs is that they are detachable, reinforceable, non-defeasible, at-issue, and non-projective meanings. Given this behavior, they cannot be straightforwardly reduced to one single type of meaning. Therefore, I have proposed to analyze EMs as being partly truth-conditional and partly conversational implicature. This treatment can explain their mixed behavior. Furthermore, this proposal is fully compatible with my analysis of weak definites, in particular with the

presence of the U predicate in the logical form of weak definite sentences.

Now that I have provided empirical and theoretical evidence in favor of the U being part of the logical form of the sentences, I can proceed to motivate another aspect of my analysis of weak definites. In the next chapter, I motivate the absence in this logical form of explicit existential quantification over individuals instantiating the kinds referred to by weak definites. This predicts that weak definites are not able to establish discourse referents.

CHAPTER 7

Discourse reference and weak definites

Abstract. This chapter examines the discourse referential nature of weak definites, which is unclear at first glance, although my account of weak definites predicts to them be defective. This chapter reports two experiments testing the capacity of weak definites, compared to bare singulars, indefinites, and regular definites, to elicit coreferring pronouns and definites. The results revealed that weak definites, just like bare singulars, elicited significantly less pronouns than indefinites and regular definites. However, the statistical analyses suggest that it would be inaccurate to attribute this tendency to the referential defectiveness of weak definites and bare singulars. Instead, what seems to have been a decisive factor in these experiments is that weak definites and bare singulars occurred more often as prepositional objects than indefinites and regulars definites did. Given these results, it remains necessary to conduct more research. One attempt to fulfill this need is Cooley's (2013) follow-up study.¹

¹This chapter is based on a paper written in collaboration with Jolien Scholten (i.e. Scholten and Aguilar-Guevara, 2010). After its publication, new statistical analyses were conducted on the data of the experiments reported in the paper and, given the results, significantly different conclusions had to be drawn. I gratefully acknowledge the help of Maartje Schulpen in this revision.

7.1 Introduction

One of the peculiar properties of weak definites is that they do not seem to be able to establish discourse referents. This can be observed by means of their questionable capacity to serve as antecedents of anaphoric pronouns:

- (326) a. Lola listened to **the radio**_{*i*} until she fell asleep. ? She turned **it**_{*i*} off when she woke up in the middle of the night.
 b. Alice played a solo on **the saxophone**_{*i*}. ? She did not realize **it**_{*i*} was out of tune.

My analysis of weak definites predicts that weak definites indeed are discourse-referentially defective. As (327) illustrates, this proposal attributes to weak definite sentences a type of logical form that does not include existential quantification. This type of quantification commonly implies the establishment of referents into the discourse (Heim, 1982; Kamp, 1981; Groenendijk and Stokhof, 1990, 1991). Therefore, a logical form lacking this quantification is rather compatible with the absence of them:

- (327) a. Lola read the newspaper.
 b. $\exists e[Read(e) \wedge Ag(e) = lola \wedge R(Th(e), \mathbf{N})] \wedge U(e, \mathbf{N})]$

However, examples like (326) are questionable but not unacceptable. This shows that the alleged discourse referential defectiveness of weak definites is not so evident and it requires more systematic investigation. To contribute to satisfy this need, the present chapter reports two experiments that examined the participants' preferences for two types of anaphoric expressions, pronouns and definites, to refer back to weak definites, indefinites, regular definites and bare singulars. The results suggest that weak definites, just like bare singulars, behave differently from indefinites and regular definites: whereas indefinites and regular definites favored pronouns over full NPs, weak definites and bare singulars triggered pronouns in only (almost) half of the cases. These tendencies are consistent with weak definites and bare singulars not being able to establish discourse referents, in contrast to regular definites and indefinites, which can do so. However, given the outcome of some statistical analyses, it is necessary to accept the tendencies with caution. Surprisingly, a factor seeming to have influenced the tendencies of these studies is that in the experiments

weak definites and bare singulars occurred more often as prepositional objects than indefinites and regular definites.

Given these unexpected results, it remains necessary to conduct more studies in order to disentangle the question of what the discourse referential nature of weak definites is. One attempt to fulfill this need is an experiment reported in Cooley (2013), which is also discussed in this chapter. This experiment also tested the capacity of weak definites and regular definites to trigger coreferring pronouns and definites, but in a different setting. The data obtained reveal that regular definites elicited significantly more pronouns than weak definites.

Both Cooley's experiment and the two studies reported here tested the production side of the discourse properties of weak definites. However, in future research it is also necessary to conduct interpretation studies. Some ideas for these studies are also provided here.

The structure of the chapter is as follows. Section 7.2 discusses the discourse referential properties traditionally attributed to definites and indefinites. Section 7.3 introduces the problem weak definites represent regarding discourse reference. Section 7.4 reports the experiments. Section 7.5 discusses Cooley's experiment. Section 7.6 provides some ideas for future interpretation experiments. Finally, Section 7.7 provides concluding remarks.

7.2 Definites, indefinites and discourse reference

To discuss the discourse referential properties of definite and indefinites it is necessary to introduce some basic notions of dynamic theories of meaning such as Heim's (1982) File Change Semantics and Kamp's (1981) Discourse Representation Theory. In these theories, the semantic value of sentences is not only their truth conditions. Crucially, it is also the potential of this value to change the so-called *common ground*, which is the set of information shared by the participants of a conversation, with respect to which sentences produced by these participants are evaluated (Stalnaker, 1978). This information consists of the knowledge, beliefs, and assumptions of the participants, which can be linguistically given, presupposed, or simply the product of the educational, cultural and sensorial experience of the participants. As the conversation progress, the common ground changes. It gets enriched with referents and with the information about them.

Just as the meaning of a sentence in dynamic theories involves not only its truth conditions but also its potential to change the common ground, the meaning of the phrases constituting the sentence is defined not only on the basis of their denotation but also of their contribution to this potential. Accordingly, the semantic value of a NP includes whether or not it is referential, that is, whether or not it can establish discourse referents in the common ground. Referential NPs either introduce new referents or pick up familiar ones, which are already in the common ground. Indefinites typically introduce new referents. Definites typically refer to familiar ones.

The usual way to detect whether a NP is referential is by means of another type of referential NP, specifically, anaphoric pronouns. Anaphoric pronouns refer to entities that are already part of the common ground. Therefore, they can only corefer with a NP if this one either introduces a referent (328), or picks up a familiar one (329):

- (328) a. Yesterday I saw **a donkey**_{*i*} in my garden. I pet **it**_{*i*} while **it**_{*i*} was sleeping next to my roses.
 b. The other day I discovered **an Afghan restaurant**_{*i*} in my neighborhood. Yesterday I tried **it**_{*i*} and I loved **it**_{*i*}.
- (329) a. Yesterday I saw a unicorn_{*i*} and a donkey in my garden. I beat **the unicorn**_{*i*} because **it**_{*i*} was eating my roses.
 b. The other day I discovered **an Afghan restaurant** and an English pub in my neighborhood. Yesterday I tried **the restaurant** and loved **it**_{*i*}.

In sum, indefinites and regular definites are expressions that establish discourse referents. Indefinites introduce new ones. Definites refer to familiar ones. These referential properties are reflected on the fact that both can be referred back by anaphoric pronouns. With this panorama in mind, let me now examine how weak definites behave.

7.3 Discussing the referential properties of weak definites

It is unclear whether weak definites are able to establish entities in the common ground. According to the previous discussion, if weak definites can establish referents, then they should be able to serve as antecedents

of anaphoric pronouns. However, as shown in the contrast between the sentences with indefinites and regular definites in (328) and (329), and the examples with weak definites in (330), such a prediction is not clearly confirmed. Pronouns referring back to weak definites do not sound as ‘natural’ as pronouns referring back to definites and indefinites:

- (330) a. I checked **the calendar**_i when I was planning my appointments and put **it**_i back in my desk.
 b. Sheila took **the train**_i to the airport. She caught **it**_i just on time.

Conversely, if weak definites are not able to establish discourse referents, then they should not corefer felicitously with pronouns, just like it happens with other NPs that do not establish any discourse referent. Following works on bare singulars across languages such as van Geenhoven (1998); Stvan (1998); Farkas and de Swart (2003); Dayal (2003); Stvan (2009); Espinal and McNally (2011), I consider those bare singulars in complementary distribution with weak definites to be non-referential and therefore unable to serve as antecedents of anaphoric pronouns. This is illustrated in (331). Notice that these examples are not completely unacceptable. For the time being I accept this as evidence of the lack of referentiality of bare singulars and return to this issue in Section 7.4.3.

- (331) a. ?? Lola is still at **school**_i because today her class had to help to clean **it**_i.
 b. ?? After having watched **TV**_i for twelve hours in a row, I finally threw **it**_i out of the window.

As show by the comparison between the previous sentences and the sentences with weak definites in (330), pronouns coreferring with weak definites are more acceptable than those coreferring with bare singulars. Thus, if we are willing to treat weak definites as non-referential expressions, then an explanation for the contrast between them and bare singulars is still necessary. In Section 7.4.3, I also return to this issue.

In sum, the evidence I have provided so far to determine whether or not weak definites can establish discourse referents is inconsistent. On the one hand, pronouns referring back to weak definites do not sound as ‘natural’ as pronouns referring back to definites and indefinites, which normally establish discourse referents. On the other hand, pronouns coreferring with weak definites are certainly more acceptable than those coreferring

with bare singulars, which I assume to be referentially defective. Given this inconsistency and the relevance of clarifying whether or not weak definites can be antecedents of anaphoric expressions, it is necessary to search for more systematic empirical evidence. The experiments I present in the following section aimed to do so.

7.4 Testing the discourse referential properties of weak definites

The point of departure of the present experiments is the traditionally assumed correlation between different classes of anaphoric expressions and the level of accessibility of their antecedents (Ariel, 1990; Gundel et al., 1993; Kaiser and Vihman, 2006). According to this correlation, more reduced anaphoric expressions (e.g. pronouns) are more suitable for highly accessible antecedents, whereas fuller expressions (e.g. definites) are more suitable for less accessible referents. This is schematized as follows:²

$$(332) \quad \text{NULL} > \text{PRONOUNS} > \text{DEMONSTRATIVES} > \text{DEFINITES}$$

highly accessible referents
non-accessible referents

Having in mind this correlation, the present studies assessed the capacity of Dutch weak definites, bare singulars, regular definites and indefinites to elicit pronouns and definites. Participants were presented with sentences containing a target NP and a continuation with a blank to be filled either with a pronoun or with a definite, which was intended to corefer with the target NP. The rationale of the experiments is that in a minimal discourse in which a target NP has to be referred back to by an anaphoric expression, a pronoun would be used if the target NP is able to establish a discourse referent. Conversely, if the target NP does not establish any referent, a full anaphoric NP would rather be used. The presumption is

²The level of accessibility of a referent is determined by several factors such as the grammatical role of the NP setting up the referent, its information structure status, and the ordering of this NPs with respect to other constituents in the sentence (Ariel, 1990; Gundel et al., 1993; Hoffman, 1998; Strube and Hahn, 1996, 1999; Kaiser, 2000). Discussing these factors is beyond the scope of this chapter as its main focus is the presence vs. absence of discourse reference rather than the level of accessibility of referents. Due to the unexpected outcome of the experiments, the grammatical role of the NPs will in the end receive attention in the coming subsections but only superficially.

that a full NP can better “rescue” the discourse from being odd given the lack of a discourse referent because the full NP carries semantic information permitting to accommodate a discourse referent on the basis of the previous linguistic context.

7.4.1 Experiment 3. Comparing weak definites, bare singulars and indefinites

7.4.1.1 Materials

The target items consisted of 18 mini-discourses, 6 per condition. They are illustrated in (333)–(335). These mini-discourses contained two sentences. In the first one, the target NP was introduced in second argument position either as the object of a prepositional phrase (333)–(334) or as a direct object (335). The second sentence of the mini-discourses contained a blank in direct object position. The discourses were followed by two options to fill the blank with. One option was a definite containing the same noun as the target NP. The other option was the contracted form of the pronoun *hem*, *'m* (‘him/it’), which is only used in informal Dutch. The contracted form was used in order to encourage the participants to provide their intuitions in spoken language.

(333) *Weak definite*

Guido luisterde vanochtend naar de radio. Hij zette _____ zo hard dat de burens er wakker van werden.

‘Guido listened to the radio this morning. He turned _____ up so loud (lit: ‘he put so hard...’) that it woke up the neighbours’

- a. *'m*
‘it’
- b. de radio
‘the radio’

(334) *Bare singular*

Coby lag gisteravond vroeg in bed. Ze heeft zo liggen woelen dat ze _____ vanmorgen opnieuw heeft opgemaakt.

‘Coby went to bed early yesterday evening. She tossed and turned so much that this morning she had cleaned _____ up again.’

- a. *'m*
‘it’

- b. het bed
'the bed'

(335) *Indefinite*

Nienke zocht gisteren een map. Ze heeft _____ zo juist gevonden.

'Nienke searched for a folder yesterday. She has just found _____'

- a. 'm
'it'
- b. de map
'the folder'

There is an important remark to do regarding the constructions of the materials: the choice of items was very limited. For that reason we had to use target NPs occurring both as direct objects and as prepositional objects. For the same reason there were only 6 items per condition. As we know, weak definites and bare singulars are not fully productive constructions. Moreover, from the reduced set they constitute, morphologically neuter NPs had to be excluded. As (336) illustrates, neuter NPs can usually be referred to by both masculine and neuter pronouns. Given that neuter pronouns can refer not only to individuals but also to situations, we preferred not to include them in the choices and in that way avoid any possible interfering ambiguity.

- (336) Jeroen gebruikte een mes (neuter) voor het snijden van zijn brood. Daarna heeft hij het/hem teruggelegd.
'Jeroen used a knife to cut his bread. After that he put it/him back'

Furthermore, weak definites and bare singulars with a locative meaning were avoided as much as possible. In Dutch language, it is common to refer to them with the particle *er* meaning 'there' in these contexts. It is unclear whether *er* is in fact an anaphoric expression but at least it has other distributional properties than pronouns. Moreover, by excluding locatives as much as possible, each item of the experiment could include the pronoun 'm as one of the choices to fill in the blank. Still a few locatives had to be used. In these cases the discourses were constructed in such a way that the use of *er* to refer back to the target NPs would have been unacceptable. This is illustrated in (337a) as opposed to (337b). In (337a) the presence of *helemaal* 'entirely' blocks the use of *er*.

- (337) a. Jan ging gisteren naar zolder. Het was er zo rommelig dat hij
 *er/hem vandaag helemaal heeft opgeruimd.
 ‘John went to the attic yesterday. It was such a mess, that
 today he cleaned there/him (entirely)’
 b. Jan ging gisteren naar zolder. Het was er zo rommelig dat hij
 er/hem vandaag heeft opgeruimd.
 ‘John went to the attic yesterday. It was such a mess, that
 today he cleaned there/him’

The target items were integrated into a set of 36 fillers with a similar format. Unlike the targets, these fillers contained blanks not only in object position but also in subject and oblique positions. Furthermore, the target NPs referred back to proper names or bare plurals occupying subject or object position in the first sentence. See the following example:

- (338) Marie was de afgelopen weken veel aan het hardlopen _____
 heeft geprobeerd af te vallen.
 ‘Mary was running a lot last weeks _____ has tried to lose
 weight’
 a. ze
 ‘she’
 b. Marie
 ‘Mary’

The entire list of target items and fillers used in Experiment 3 can be seen in Appendix C.

7.4.1.2 Method

This study had a within-subject design and involved three conditions: weak definites, bare singulars and indefinites. All target sentences and fillers were randomized, just as the order of the options that participants could choose from. The materials were presented in a pen-and-paper questionnaire distributed in class. The questionnaire included written instructions, which explicitly asked participants for their intuitions in spoken language. Sixty-five native Dutch-speaking undergraduates at Utrecht University voluntarily participated in this experiment.

7.4.1.3 Predictions

One prediction was drawn on the basis of the observed behavior of weak definites and bare singulars as opposed to indefinites, specially, on the contrast between the acceptability of sentences with pronouns referring back to indefinites (328) and regular definites (329) on the one hand, and weak definites (330) and bare singulars (331) on the other hand. *Prediction 1* was that indefinites would elicit more pronouns than bare singulars and weak definites.

Additionally, given the difference between the acceptability of sentences with weak definites and sentences with bare singulars, the following tendency was anticipated. *Prediction 2* was that weak definites would elicit more pronouns than bare singulars.

It is important to remark that Prediction 2 was formulated on the basis of the contrast between sentences (330) and (331). However, this does not mean that I would like to attribute different discourse referential properties to weak definites and bare singulars. Following my account of weak definites and the parallel way in which I propose to treat bare singulars (see Chapter 8, Section 8.2.1), I suggest that both constructions are discourse referentially defective. What I suggest to be the actual difference between them, which makes pronouns coreferring with weak definites sound better than those coreferring with bare singulars, is that weak definites can always be reanalyzed as regular definites. This reanalysis prevents the pronouns from being unacceptable. The influence of this difference between weak definites and bare singulars requires further verification in other types of experiments (see Section 7.4.3 for discussion). However, in the present studies, I already expected the difference to manifest in bare singulars eliciting remarkably less pronouns than weak definites, for which more variation is expected because they can always be reanalyzed.

7.4.1.4 Results

Figure 7.1 shows the percentages of pronouns and definites elicited per condition in Experiment 3. As can be seen, pronouns were the most preferred option for every condition, but indefinites elicited noticeably more pronouns than weak definites and bare singulars. A mixed effects logistic regression analysis was used to model these results and determine whether the differences between conditions were significant. The dependent vari-

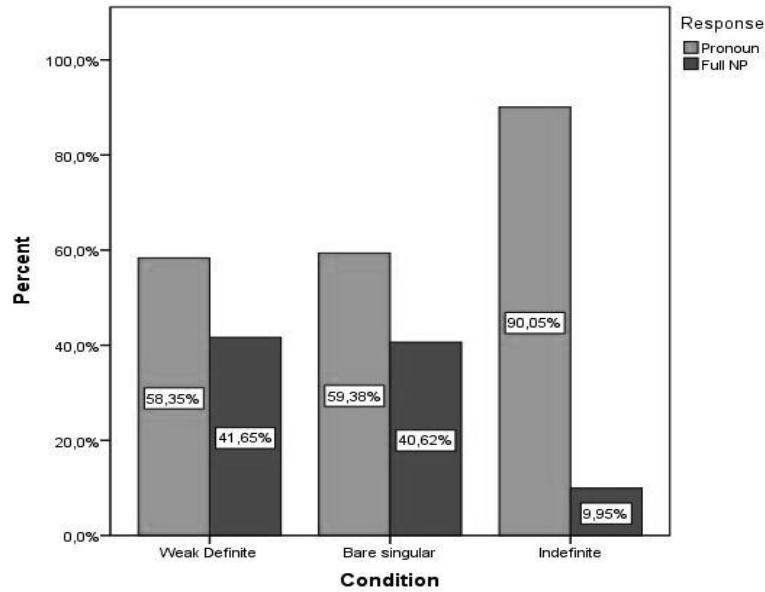


FIGURE 7.1: Percentages of response type (Pronoun or Definite) per condition (Weak Definite, Bare Singular, Indefinite) in Experiment 3.

able was Pronoun, and Subject and Item factors were used as random factors since these were crossed in the design. In order to test whether the effect of the factor Condition was significant, the baseline model M0, which contained no fixed factors, was compared to M1, a model including the Condition fixed factor. A chi square analysis on the log Likelihood of M0 and M1 (-517.86 and -514.16 respectively) showed a significant difference between the two ($\chi^2(2)=7.4161$, $p=.0245$), indicating that M1 is the more appropriate model. Thus, we can conclude that there was a significant overall effect of the factor Condition. Within M1, there was a significant difference between the Weak Definite condition and the Indefinite condition ($\beta=2.3007$, $SE=0.8567$, $p=.0072$), and between the Bare Singular condition and the Indefinite condition ($\beta=2.1851$, $SE=0.8595$, $p=.0110$), but not between the Weak Definite condition and the Bare Singular condition ($\beta=-.1151$, $SE=0.8443$, $p=.892$). In other words, indefinites indeed triggered significantly more pronouns than weak definites and bare singulars, but there was no significant difference between the amounts of pronouns elicited by weak definites and bare singulars.

Although these tendencies are interesting given that they seem to confirm Prediction 1, it is necessary to accept them with caution because of the unexpected effect of another factor, namely, the grammatical role of the target NPs. As mentioned previously, the items used in this experiment included target NPs occurring both as direct objects and prepositional objects. Suspecting that this might be a methodological problem disturbing the picture, another statistical analysis was conducted. Model M1 was then compared to M2, a model that included Grammatical Role as an additional fixed factor. A second chi square analysis, this time on the log Likelihood values of M1 and M2 (-514.16 and -511.60 respectively) revealed a significant difference ($\chi^2(1)=5.1159$, $p=.0237$), showing that M2 is the best fitting model for these data. Within M2, there was a significant effect of Grammatical Role ($\beta=2.1030$, $SE=0.8604$, $p=.0145$), revealing that the subjects chose pronouns significantly more often when the target NPs occurred in direct object position than when they occurred in prepositional object position. Crucially, in this model the differences between the various levels of Condition disappeared: Weak Definite Condition-Indefinite Condition: ($\beta=.5271$, $SE=1.0312$, $p=.6092$), Bare Singular Condition-Indefinite Condition: ($\beta=2.3007$, $SE=0.8567$, $p=.0072$), Weak Definite Condition-Bare Singular Condition ($\beta=-.2332$, $SE=0.7401$, $p=.7527$). M2 being more adequate than M1 and significant differences within conditions disappearing in M2 suggest something crucial: the data of this experiment can be more adequately explained if we look at them in terms of whether the target NPs were direct or prepositional objects than if we look at them in terms whether the target NPs were weak definites, bare singulars or indefinites.³

To corroborate the lack of significance between conditions once the Grammatical Role factor is taken into account, another analysis was conducted but only with the data corresponding to those items in which target NPs occurred as direct objects. For these data a comparison was made between M0, again with no fixed factors, and M1, with the Condition fixed factor (the dependent variable was again Pronoun and the random factors were Subject and Item). A chi square analysis on the log Likelihood values of the two models (-194.49, -193.63 respectively) showed no significant difference ($\chi^2(2)=1.7028$, $p=.4268$). This indicates that

³M3, containing the interaction between the factors Condition and Grammatical Role, failed to converge. This was probably because of the large overlap between both factors.

there was no significant effect of Condition in this data subset either. This suggests that the significant preference of pronouns should be attributed to the fact that the target NPs were in direct object position and not to the fact that they were indefinites. I discuss the implications of all these results in Section 7.4.3.

7.4.2 Experiment 4. Comparing weak definites, indefinites and regular definites

To complete the paradigm of NP types to be studied, this experiment tested regular definites in comparison to weak definites and indefinites.

7.4.2.1 Materials

The items of this study were similar to those of the previous experiment. This time, items with regular definites were included instead of items with bare singulars. An example of these items is shown as follows:

- (339) *Regular definite*
 Aniek maakte de mat uit de hal schoon. Daarna heeft ze _____
 terug gelegd.
 ‘Aniek cleaned the mat in the hall. After that she put _____
 back.’
 a. ’m
 ‘it’
 b. de mat
 ‘the mat’

Introducing an entity out of the blue with a regular definite construction results in an infelicitous sentence (e.g. #Today I met the girl). For that reason the regular definites used in the experiment were either globally unique entities (like *de maan* ‘the moon’) or phrases with a possessive marker (like *haar kledingkast* ‘her wardrobe’) or with postnominal modification (like *de mat in de hal* ‘the mat in the hall’).⁴

⁴An anonymous reviewer of Scholten and Aguilar-Guevara (2010) pointed out that the regular definites used in the experiment are rather “special” definites, which are introduced without a preceding context. The reviewer argues that these definites do not necessarily pattern like ‘regular’ definites. Following Schwarz (2009), I consider every definite description referring to a uniquely identifiable ordinary individual to be a regular definite independently of how it establishes its unique reference (i.e. whether by context, by world knowledge or by a bridging inference).

As mentioned previously, during the execution of the previous experiment there was a difference between the sentences with bare singulars and weak definites on the one hand and those with indefinites on the other hand, which could have been controlled better. Whereas all the indefinites occurred as direct objects, bare singulars and weak definites mainly occurred as prepositional objects. In this new experiment, some of the sentences with indefinites were changed so that three out of the six indefinites occurred as direct objects and three as prepositional objects. Similarly, three of the six regular definites to be tested in this new experiment were placed in prepositional object position and three in direct object position. This resulted in a set of direct objects and prepositional objects that was more balanced across conditions than the set tested in Experiment 3.

The entire list of target items and fillers used in Experiment 4 can be seen in Appendix C.

7.4.2.2 Method

The design and the procedure of this experiment were the same as in the previous experiment. The only difference in the design was that this time the tested conditions were Weak Definite, Regular Definite and Indefinite. Forty-one) native Dutch-speaking undergraduates at Utrecht University participated voluntarily.

7.4.2.3 Predictions

The first prediction of this study was again Prediction 1. The second prediction, formulated on the basis of the discussed behaviour of weak definites as opposed to definites and indefinites, was *Prediction 3*: indefinites and regular definites would elicit more pronouns than weak definites.

7.4.2.4 Results

Figure 7.2 shows the percentages of pronouns and definites elicited per condition in Experiment 4. As can be seen, pronouns were the most preferred option for every condition, but regular definites and indefinites triggered noticeably more than weak definites. Again, a mixed effects logistic regression analysis was used to model the results and determine whether the differences between conditions were significant. The baseline model M0 was compared to M1, containing Condition as a fixed factor.

The dependent variable was Pronoun, and Subject and Item were used as random factors. Although the log Likelihood of M0 was slightly lower than that of M1 (-291.87 and -294.07 respectively), a chi square analysis showed no significant difference between the two ($\chi^2(2)=4.417$, $p=.1099$). This indicates that there was no significant effect of Condition at all. However, as it happened in Experiment 3, the model M2, with Grammatical Role as fixed factor, was a significantly better fit than M0 (log Likelihood of M2=-288.49, ($\chi^2(1)=11.16$, $p=.0008$). This means that subjects chose pronouns significantly more often when the target NPs were in direct object position than when they occurred as prepositional objects ($\beta=3.7357$, $SE=0.9378$, $p<.0001$).

To corroborate the lack of any significant effect of the Condition factor, another analysis was conducted but this time only with the responses obtained from those items in which the target NPs occurred in direct object position. For these data a comparison was made between M0, a model with no fixed factors, and M1, a model with the Condition fixed factor. The dependent variable was again Pronoun, and the random factors were Subject and Item. Again, a chi square analysis on the log Likelihood values of the two models (-63.289, -61.663 respectively) showed no significant difference ($\chi^2(2)=3.2518$, $p=.1967$), which indicates that there was no significant effect of Condition in this subset of the data either. I discuss the implications of all these results in the coming section.

7.4.3 Discussion

The present experiments assessed the capacity of four different types of NPs –weak definites, bare singulars, regular definites and indefinites– to elicit coreferring pronouns and definites. The first experiment compared weak definites, bare singulars, and indefinites. The second experiment compared weak definites, regular definites and indefinites. Participants were presented with sentences containing the target NP plus a continuation with a space in blank to be filled either with a pronoun or with a definite, which was intended to corefer with the target NP. The studies had three predictions. Prediction 1 was that indefinites would elicit more pronouns than bare singulars and weak definites. Prediction 2 was that weak definites would elicit more pronouns than bare singulars. Prediction 3 was that regular definites would elicit more pronouns than weak definites.

In the first experiment, weak definites and bare singulars preferred

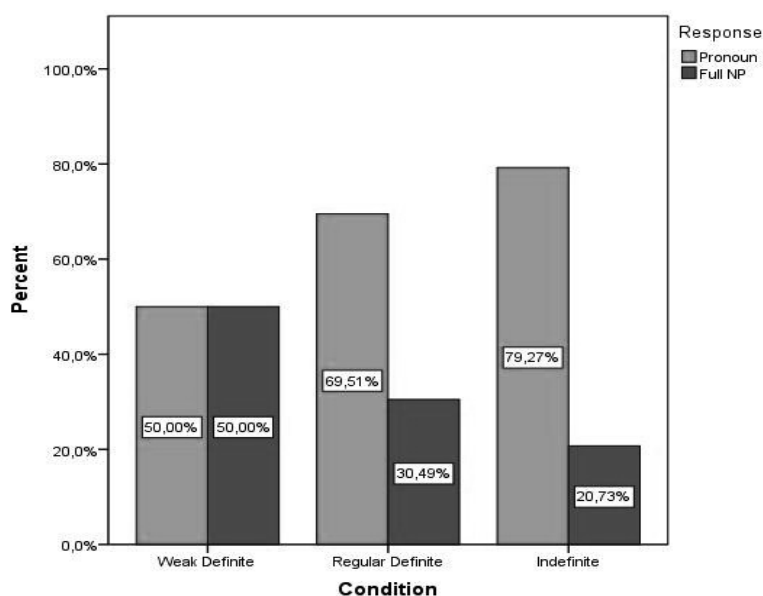


FIGURE 7.2: Percentages of response type (Pronoun or Definite) per condition (Weak Definite, Regular Definite, Indefinite) in Experiment 4.

pronouns over definites significantly less than indefinites. This tendency is consistent with Prediction 1. However, we suspected that the tendency was due to the fact that in the materials of this experiment the number of indefinites in object position was higher than the number of weak definites and bare singulars in this position. A statistical analysis on the whole range of data showed that, indeed, once the grammatical role of the target NPs was taken into account as a factor, then the effect of the factor type of target NPs was no longer significant. Another statistical analysis conducted only on the data corresponding to those items in which the target NPs occurred as direct objects showed that, within that condition, there was no significant effect of the type of target NP either. The second experiment, which tested a more balanced number of prepositional objects and direct object across conditions, revealed a similar panorama to the one of the first experiment. A statistical analysis on the whole range of data showed that there was no significant effect of the type of target NP. Another statistical analysis only on the data corresponding to the items in which the target NPs occurred as direct

objects showed no significant effect either.

In conclusion, according to the statistical analyses, what seems to have determined the preference for pronouns or definites in the present experiments was not target NPs being weak definites, bare singulars, regular definites or indefinites, but rather whether they occurred as direct objects or as prepositional objects. Unfortunately, these results do not throw light on what the discourse referential nature of weak definites is. This means that more studies have to be conducted in order to disentangle this question. One attempt to satisfy this need is a study reported by Cooley (2013), which I will discuss in the coming section. After that, I will then provide other ideas for future experiments.

7.5 Cooley's (2013) follow-up study

In her master thesis, Cooley presents a study which also tested the capacity of weak definites to elicit coreferring pronouns. The study had multiple aims and, as such, it also tested several conditions (in a 2 X 3 factorial design) and predictions at the same time. As not every condition and prediction is relevant to the purpose of discussing this experiment in the present chapter, here I only provide a partial presentation of the study, and refer the reader to Cooley's manuscript to learn about the rest.

One of the goals of the study was to attest what Cooley calls the *uneasy-antecedent effect* of weak definites in a setting inspired by Experiments 3 and 4. To do so, the study compared weak definites with other non-weak definites.⁵ Crucially, both types of definites occurred in the

⁵The group of tested weak definites included fourteen usual weak definites (e.g. *to read the newspaper*). The group of tested non-weak definites included seven weak definites modified with an adjective blocking the weak reading (e.g. *to read the crumpled newspaper*), seven definites with a pronoun instead of a definite article and governed by a verb not triggering a weak reading (e.g. *to crumple his newspaper*), and fourteen definites governed by verbs that trigger weak definites, but with a pronoun instead of an article, and a noun that does not trigger a weak reading (e.g. *to read his book*). There were twice as many non-weak definites than weak definites because the study tested other predictions and conditions involving them. As this study aimed to compare weak definites with referential definites, it makes some sense that the non-weak definites would have pronouns instead of definites. However, I believe that the results of the study would have been more reliable if it would have compared weak definites and non-weak definites that were minimally different from each other with the presence of definite articles alone.

same configuration in most of the cases (i.e. governed by the same verbs as in *to read the newspaper* vs. *to read the book*). This avoids the problem present in Experiments 3 and 4, namely, among the items there were more weak definites in prepositional phrases than definites and indefinites.

In this experiment, the sentences embedding the definites occurred in discourses of 5 to 6 sentences. In each discourse, the experimental token occurred in the sentence before the last one. The final sentence of each discourse contained a blank which had to be filled with one of two given anaphoric phrases, either a pronoun or a full definite with the same noun contained by the target definite. The anaphoric phrases necessarily coreferred with the target definite. The following example illustrate this:

- (340) When Andrea and Carl got back from their summer vacation, everyone wanted to know what they did. "First we flew to California and visited with some friends," said Andrea, "and while we were there we went hiking every day. Then we spent two days driving to Oregon and sightseeing. We camped out overnight and went star-gazing, and built a bonfire to cook S'mores. When we got there, we also went to [**the beach**_{weak definite}/ **the local river**_{non-weak definite}]. I was so excited, because _____ had the perfect conditions for kayaking.
- a. it
 - b. the beach

One of the predictions of this study was that those definites lacking a weak reading would elicit significantly more pronominal responses than weak definites. In fact, according to a chi-square test reported by Cooley, this prediction was observed ($\chi^2(1, N=040)=7.81, p<0.05$.)

Cooley's study was conducted with sufficient care as to the number of items, fillers, participants, as well as the way the items were distributed among them.⁶ However, the study also had some problematic aspects, like the amount of conditions tested at the same time, and the lack of a fine-grained statistical analysis. Nevertheless, my point with discussing the study here is that the fact that the uneasy-antecedent effect of weak definites was observed in this experiment suggests to me that this tendency

⁶Eighty-four (14 x 3 x 2) items were presented to 79 anonymous participants in such a way that each participant was exposed to all the conditions but not to all the items (each participant was presented with only 14 experimental items plus 28 filler items). So, a total of 1040 observations were collected.

is real and that motivates future attempts to confirm the discourse referential defectiveness of weak definites.

7.6 Further research on referentiality and weak definites

All the studies presented so far tested the production side of weak definites' discourse properties. However, it is also necessary to conduct interpretation studies. One possibility that naturally comes to mind is to exploit the insights from the literature on the processing of pronouns (e.g. Garrod and Sanford, 1977; Gordon et al., 1993; McDonald and MacWhinney, 1995; McKoon et al., 1996; Arnold, 1998; Arnold et al., 2000; Arnold, 2001, 2010) and conduct experiments such as acceptability judgment questionnaires and self-paced or eye-tracking reading experiments. These experiments could test versions of sentences (333), (334), (335), and (339) completed with pronouns, as (341), (342), (343), and (344) illustrate:

- (341) *Weak definite*
Guido listened to the radio this morning. He turned it up so loud that it woke up the neighbors.
- (342) *Bare singular*
Coby went to bed early yesterday evening. She tossed and turned so much that this morning she had cleaned it up again.
- (343) *Indefinite*
Nienke searched for a folder yesterday. She has just found it.
- (344) *Regular definite*
Aniek cleaned the mat in the hall. After that she put it back.

The predictions of these experiments would be that regular definites and indefinites would trigger higher acceptability, in the case of the questionnaires, and faster reading times and less processing trouble, in the case of the online studies, than weak definites and bare singulars. Also, I predict that weak definites would trigger higher acceptability and less processing trouble than bare singulars. This is in accordance with my idea that, although both weak definites and bare singulars are discourse referentially defective, only weak definites can be reanalyzed as regular definites when no conditions for the emergence of weak readings would cause oddity.

It is well known that in particular self-paced and eye-tracking reading experiments can be very good methods to disentangle questions regarding referential processing. However, when it comes to testing the properties of weak definites, it is possible that they may not be able to provide sufficiently fine-grained distinctions between these and other nominal phrases because of two reasons. First, even if weak definites are in fact unable to establish discourse referents, this condition may not cause enough processing trouble to reflect on reading times, fixations, saccades or any other measure that could be obtained from these types of experiments. After all, hearers tend to be very efficient at accommodating discourse referents in order to make sense of sentences and entire discourses. Second, weak definites can always be reinterpreted as regular definites in situations where there are no proper conditions for their weak reading to emerge. If we accept that weak definites are discourse referential defective, one of these situations could be what sentence (341) seems to illustrate; that is to say, when a discourse referent needs to be accommodated in order to make sense of a pronoun coreferring with a weak definite.

An alternative type of experiments that has proven to be truly revealing about different types of nominal phrases and their discourse-referential properties are Event Related Potential (ERP) studies (e.g. Coulson and Van Petten, 2002; Kaan et al., 2007; Burkhardt, 2006; Burkhardt and Roehm, 2007; Burkhardt, 2007; Kaan et al., 2007; Schumacher, 2009, 2011; Schumacher and Hung, 2012; Schumacher and Weiland, 2014). ERP experiments measure small voltage fluctuations replicating the spontaneous electrical activity of the brain, which arises as a result of a cognitive, sensory or motor event. When the event is the processing of referential expressions, there are two types of relevant fluctuations. One type, N400, is a negative deflection peaking around 400 ms after the target expressions onset. The other type, P600, is a positivity with a later peak around 600 ms. The N400 component reflects the influence of the lexical meaning of words and their relations on the degrees of referents' accessibility. P600 typically reflects processing demands associated with the creation of new discourse referents and in general with the update of the discourse representation structure via different mechanisms such as accommodation of presuppositions.

Given these facts about the N400 and P600, the ERP technique seems to be ideal to find differences between weak definites and other nominal phrases, in particular, regular definites and bare singulars. Indeed, Schumacher and Weiland (2014) claim so. I propose to test sentences like

(341)-(344) and examine the voltage magnitudes corresponding to the processing of the pronoun. I predict higher magnitudes when the pronoun corefers with weak definites than when it does so with regular definites. Also, I predict significant differences between the magnitudes triggered by weak definites and by bare singulars. Assuming that reinterpreting a weak definite as a regular one would not trigger the same type of voltage fluctuations as having to accommodate a referent in order to make sense of a pronoun whose antecedent is a bare singular, I predict significantly different magnitudes for pronouns coreferring with weak definites than for pronouns coreferring with bare singulars.

7.7 Conclusion

This chapter examined the discourse referential nature of weak definites, which the analysis defended in this dissertation predicts to be defective. After the introduction in Section 7.1, Section 7.2 discussed the properties traditionally attributed to regular definites and indefinites, that is, indefinites introduce new referents and definites pick up familiar ones. After that, Section 7.3 showed that, at first glance, it seems unclear whether or not weak definites can establish referents. Evidence of this is the dubious capacity of weak definites to corefer with pronouns: on the one hand, they do not sound as “good” as definites and indefinites; on the other hand, they are more acceptable than bare singulars, which is another type of referentially defective NP. With the aim of clarifying this contradictory evidence, Section 7.4 presented two experiments that studied the capacity of weak definites, bare singulars, indefinites, and regular definites to be referred back by pronouns and definites. Data from the experiments revealed that weak definites, just like bare singulars, preferred to be the antecedent of a pronoun significantly less than indefinites. However, statistical analyses showed that this tendency cannot be attributed to the discourse referential nature of weak definites and bare singulars. Instead, it seems to be attributed to the fact that both weak definites and bare singulars mainly occurred as prepositional objects in the materials of these experiments. This means that more studies have to be conducted in order to disentangle the question of what the discourse referential nature of weak definites is. One attempt to satisfy this need is an experiment reported by Cooley (2013), presented in Section 7.5. After that, Section 7.6 provided some other ideas for future experiments, specifically, accept-

ability judgment questionnaires and self-paced, eye-tracking and ERP studies.

CHAPTER 8

Conclusion

8.1 Main results of this dissertation

This dissertation presented a full-fledged study about the meaning weak definites, a type of construction that, until recently, remained ill-understood. The work aimed to answer three research questions: i) How exactly weak definites and the sentences in which they occur are interpreted? ii) What semantic theory can adequately account for the interpretation of weak definites and the embedding sentences? iii) How this semantics is responsible for all the peculiar properties of weak definites? Let me now show how the dissertation addressed these questions by recapitulating the main results of each chapter.

Chapter 2, which followed the general introduction, provided a detailed characterization of weak definites mainly built on Carlson and Sussman (2005). Their most relevant properties discussed in the chapter were the following:

(345) *Non-unique reference*

Context. Lola traveled by train from Amsterdam to Nijmegen, but she actually made a transfer halfway.

Sentence. Lola took the train from Amsterdam to Nijmegen.

- (346) *Resemblance with generic definites*
 a. I read the newspaper this morning.
 b. The newspaper is an excellent source of information and entertainment.
- (347) *Restricted modification*
 a. Lola went to #the old hospital.
 b. Lola went to the psychiatric hospital.
- (348) *Discourse referential defectiveness*
 Lola listened to the radio_i until she fell asleep. ? She turned it_i off when she woke up in the middle of the night.
- (349) *“Sloppy identity” in VP-ellipsis sentences*
 Lola read the newspaper and Alice did too.
 (Lola and Alice could have read different newspapers)
- (350) *“Narrow scope” interpretations*
 Every librarian read the newspaper.
 (Each librarian could have read a different newspaper)
- (351) *Typical occurrence in object position and limited capacity to occur as subjects of episodic sentences*
 a. I read the newspaper today.
 b. #The newspaper got wet today.
- (352) *Meaning enrichment*
 Eva called the doctor = Eva called a doctor + to ask for medical assistance.
- (353) *Restricted range of nouns*
 a. Martha listened to the radio.
 b. Martha listened to #the walkie-talkie.
- (354) *Restricted range of governing verbs (and verb-preposition combinations)*
 a. Martha listened to the radio.
 b. Martha fixed #the radio.

In order to account for these properties, **Chapter 3** presented a compositional analysis of weak definites. The proposal is that weak definites refer to atomic kinds, as the following example shows:

$$(355) \quad [[the\ newspaper]] = \iota x_k [Newspaper(x_k)] \\ = \mathbf{N}$$

These kinds combine with object-level predicates by means of the Kind Lifting Rule (C.6.3). The function of this lexical rule is to lift object-level predicates to kind-level predicates, to indicate that the kinds combining with lifted predicates are instantiated via the realization relation R , and to incorporate the relation U into the denotation of the lifted predicates, which corresponds to stereotypical usages (SUs) of kinds:

(356) *Kind Lifting Rule*

If V is a transitive verb (or verb-preposition combination) with an internal argument Arg and V has the meaning $\lambda x_i \lambda e [V(e) \wedge Arg(e) = x_i]$, then V also has the meaning $\lambda x_k \lambda e [V(e) \wedge R(Arg(e), x_k) \wedge U(e, x_k)]$.

Therefore if, for example, V is *to read* and it has the meaning in (C.6.3), then it also has the meaning in (C.6.3):

$$(357) \quad \text{a. } [[read]] = \lambda x_i \lambda e [Read(e) \wedge Arg(e) = x_i] \\ \text{b. } [[read]] = \lambda x_k \lambda e [Read(e) \wedge R(Th(e), x_k) \wedge U(e, x_k)]$$

The KLR constitutes a mechanism of generation of predicates which in principle can apply to any verb yielding a function that can take any atomic kind. However, the rule only operates if two circumstances co-occur, namely, the predicate in question combines with a kind associated with SUs, and the sets of events corresponding to those SUs and to the predicate intersect. This double requirement is captured by the following condition:

(358) *Condition of applicability of the KLR*

A verb (or verb-preposition combination) V with the meaning $\lambda x_i \lambda e [V(e) \wedge Arg(e) = x_i]$ can also get the meaning $\lambda x_k \lambda e [V(e) \wedge R(Arg(e), x_k) \wedge U(e, x_k)]$ and then combine with a DP referring to an atomic kind \mathbf{K} iff $\lambda e V(e) \cap \lambda e U(e, \mathbf{K}) \neq \emptyset$.

According to the present proposal, a weak definite sentence like (670a) has the logical form in (670b), which states that the sentence is true if and only if there was an event of reading, and the agent of that event is Lola, and the theme of that event instantiates the newspaper kind, and the event is part of the SUs of the newspaper kind:

- (359) a. Alice read the newspaper.
 b. $\exists e[Read(e) \wedge Ag(e) = \textit{alice} \wedge R(Th(e), \mathbf{N}) \wedge U(e, \mathbf{N})]$

The present analysis accounts for the properties of weak definites listed in (C.6.3)-(C.6.3) as follows. First of all, the assumption that a weak definite is an ordinary definite, but referring to kinds, explains both the presence of the definite article in these constructions and the lack of the uniqueness presupposition at the ordinary individual level. Given that uniqueness applies at the level of kinds and given that instantiations of kinds can be entities or sums, sentences with weak definites are felicitous in contexts where more than one entity satisfies their descriptive content (C.6.3). The kind-referring nature of weak definites also explains the resemblance between these and generic definites (C.6.3). Also, this kind-referring nature explains why modifiers are incompatible with weak readings (670a) unless they establish subclasses (670b). The logical form attributed to weak definite sentences, which does not involve existential quantification over individuals, is consistent with their apparent discourse defectiveness (C.6.3). Sloppy readings of weak definites in VP-ellipsis sentences are also due to the adopted logical form. As (670b) illustrates, in this logical form, the thematic role is specific for each event:

- (360) a. Lola read the newspaper and Alice did too.
 b. $\exists e[Read(e) \wedge R(Th(e), \mathbf{N}) \wedge Ag(e) = \textit{lola}] \wedge \exists e'[Read(e) \wedge R(Th(e'), \mathbf{N}) \wedge Ag(e') = \textit{alice}]$

Narrow scope readings (C.6.3) are due to the same reason. The event quantifier has narrow scope with respect to scope bearing operator, and the thematic role is dependent upon the event variable:

- (361) a. Every librarian read the newspaper.
 b. $\forall y[Librarian(y) \rightarrow \exists e[Read(e) \wedge R(Th(e), \mathbf{N}) \wedge Ag(e) = y]]$

The fact that weak readings of definites emerge due to the action of the KLR explains why weak definites typically occur as objects and

not as subjects (C.6.3). This rule only affects internal arguments, which typically correspond to objects and not to subjects. The presence of the *U* predicate, which is incorporated into the lifted predicates also due to the KLR, relates SUs to kinds. This captures the enriched meaning of the sentences (C.6.3). Finally, the fact that the KLR is subject to an applicability condition accounts for the lexical restrictions of weak definites: only those nouns supporting SUs can trigger weak readings (C.6.3). Likewise, only predicates that constitute sets of events intersecting the set of events corresponding to SUs can support weak readings (C.6.3).

Some of the components of the present analysis make a number of predictions, which the four chapters after Chapter 3 aimed to corroborate. The first component is reference of weak definites to kinds. This idea predicts that only adjectives operating at the level of kinds should be able to occur in weak definite configurations. Chapter 4 corroborated this prediction. The second component is the association of kinds with SUs, which is captured via presence of the *U* predicate in the denotation of verbs by virtue of the KLR. This component makes two predictions. First it predicts that only nouns designating objects used in a stereotypical way can occur in weak definites. Second, it predicts that only verbs supporting these stereotypes can govern weak definites. Both predictions were corroborated in Chapter 5. The third component is the presence of *U* in the logical form of the sentences. This component predicts that the meaning enrichment the sentences display is (at least partly) truth-conditional. This was confirmed in Chapter 6. The fourth component is the lack in the logical form of explicit existential quantification over individuals instantiating the kinds. This predicts that weak definites are not able to establish discourse referents. Chapter 7 provided support of this defectiveness. Let me now discuss in more detail the main conclusions of these last chapters.

Chapter 4 inquired the nature of adjectives acceptable in weak definite constructions. In the first part, it showed how my analysis of weak definites predicts that only adjectives operating at the level of kinds can occur in weak definite configurations. In the second part, the chapter characterized so-called *relational adjectives* and adopted the semantics attributed to them by McNally and Boleda (2004). The empirical motivation to use their proposal was that most of the adjectives allowing weak readings are relational. The theoretical motivation was that the semantics that McNally and Boleda attribute to this class of adjectives involves predication over kinds, which is consistent with the

prediction just mentioned. The third part of the chapter presented two experiments aimed to corroborate this prediction. To do so, the studies tested the effects of relational adjectives compared to individual-level adjectives on the availability of the sloppy interpretation of weak and regular definites occurring in sentences containing elided VPs. The main finding of these studies was that, indeed, relational adjectives are more acceptable in weak definite constructions than individual-level adjectives.

Chapter 5 first discussed the lexical meaning of nouns and verbs occurring in weak definite configurations (*weak nouns* and *weak verbs*, respectively) and identified a common feature to all the members of each category. The main generalization drawn about weak nouns was that they designate functional objects used in stereotypical ways. The main generalization about weak verbs was that they designate activities compatible with these stereotypical ways of use. These two generalizations not only cover (almost) all and only weak nouns and verbs. Crucially, they motivate the presence of the *U* predicate in the denotation of verbs governing weak definites (and thus in the logical form of the sentences), via the KLR. Recall that this rule only applies and generates weak verbs only if the kind the definite refers to is associated with SUs, and the set of events corresponding to the verb overlaps with the set of events corresponding to the SUs. The main generalization about weak nouns substantiates the first condition, whereas the main generalization about weak verbs substantiates the second one.

Based on this discussion, the second part of Chapter 5 determined whether or not weak nouns and verbs constitute classes of words lexically well defined. The conclusion about weak verbs was that, as they are the result of the application of a lexical rule (the KLR), they do not constitute a lexical class. The conclusion about weak nouns states that they do constitute a lexically differentiated class of nouns, and what characterizes them is the specification in their lexical entry that the object they designate is used in stereotypical ways.

The last part of the chapter provided an attempt to represent the meaning of weak nouns formally by making use of Pustejovsky's (1991) Generative Lexicon Theory (GLT), a framework that represents the meaning of words by means of structures comprising four levels of representation. One of these levels is constituted by the Qualia, which in turn consist of four components. One of these components, the Telic role, is in charge of indicating the purpose of functional objects. In principle, the meaning of weak nouns can be represented in the same way GLT

represents any functional noun, specifically, with a telic role included. To distinguish weak nouns from other functional nouns my (tentative) proposal is to add an specification in which this telic role is stereotyped.

Chapter 6 examined the pragmatic-semantic nature of the two types of information that weak definite sentences convey, namely, the literal meaning (LM) and the enriched meaning (EM). To do so, this chapter assessed whether or not LMs and EMs exhibit detachability, reinforceability, defeasibility, at-issueness, and projectivity, and compared the behavior of both types of information with that of entailments, presuppositions, conventional and conversational implicatures, and idiomatic meanings. The main conclusion about LMs was that they are non-detachable, non-reinforceable, non-defeasible, at-issue and non-projective meanings. As such, LMs can be considered regular truth-conditional content. In contrast, the main conclusion regarding EMs was that they are detachable, reinforceable, non-defeasible, at-issue, and non-projective meanings. Given this behavior, they cannot be straightforwardly reduced to one single type of meaning. Therefore, the chapter proposed that EMs are in fact a blend of truth-conditions and implicatures. This treatment can explain EMs' mixed behavior. Furthermore, this proposal is fully compatible with my analysis of weak definites.

Chapter 7 examined the discourse referential nature of weak definites, which my theory predicts to be defective. The chapter first discussed the properties traditionally attributed to regular definites and indefinites; that is, indefinites introduce new referents and definites pick up familiar ones. Following, the chapter showed that, at first glance, it is unclear whether or not weak definites can set up referents. Evidence of this is the dubious capacity of these phrases to corefer with pronouns: on the one hand, they do not sound as acceptable as ordinary definites and indefinites; on the other hand, they are more acceptable than bare singulars, which is another type of referentially defective NP. To clarify this contradictory evidence, the chapter then presented two experiments which studied the capacity of weak definites, bare singulars, indefinites, and regular definites to be referred back to by pronouns and definites. The data of the experiments revealed that weak definites, just like bare singulars, elicited pronouns significantly less than indefinites (the comparison between weak definites/bare singulars and regular definites did not reveal any significant difference at all). However, statistical analyses conducted on the data showed that this tendency cannot be attributed to the discourse referential nature of weak definites and bare singulars. Instead, it appears to be due

to the fact that both weak definites and bare singulars mainly occurred as prepositional objects in the materials of these experiments. This means that more studies have to be conducted in order to determine what the discourse referential nature of weak definites is. One attempt to satisfy this need is an experiment reported by Cooley (2013), which was also discussed in this chapter. Afterwards, some ideas for future experiments were provided, in particular, acceptability judgment questionnaires and self-paced, eye-tracking and ERP reading studies.

8.2 Two directions for future research

Throughout the dissertation I have provided a number of open questions and other particular issues which motivate further work. Apart from them, in this last section I present two directions that I am particularly interested to pursue in (immediate) future research. One is the possible extension of my analysis of weak definites to bare singulars and the other one is a refinement of the analysis, which is based on the notion of names of kinds.

8.2.1 Weak definites and bare singulars

I have shown in Chapter 2 that, across languages and dialects, weak definites share function with the class of bare singulars illustrated below (Stvan, 1998; Baldwin et al., 2006; Stvan, 2007, 2009; Lucas, 2011; Le Bruyn et al., 2011).

- (362) a. The ship is at sea/port.
 b. He's in bed/jail/prison/church.
 c. I watched television this weekend.

As Carlson and Sussman (2005) have shown, bare singulars, in addition to sharing function with weak definites, exhibit most of their properties:

- (363) *"Sloppy identity" in VP-ellipsis sentences*
 Alice is in jail and Lola too.
 (Alice and Lola could be in different jails)
- (364) *"Narrow scope" interpretations*
 Every boxer is in jail.
 (Each boxer could be in a different jail)

- (365) *Restricted range of nouns*
 a. Alice is in jail.
 b. *Alice is in cage.
- (366) *Restricted range of verbs*
 a. Alice is in jail.
 b. *Alice is in front of jail.
- (367) *Restricted modification*
 *Alice is in old jail.
- (368) *Incapacity to occur as subjects of episodic sentences*
 *Jail was full last year.
- (369) *Capacity to occur as subjects of generic sentences*
 Jail is not a nice place to be for a young woman.
- (370) *Discourse referential defectiveness*
 # Alice is in jail_i but she thinks that it_i will be demolished soon.
- (371) *Meaning enrichment*
 Alice is in jail = Alice is in a jail + to serve a sentence.

Given the similarities between bare singulars and weak definites, it seems very plausible to treat both types of phrases as having the same meaning, and thus to extend my account of weak definites to bare singulars. This possibility has already been entertained by Le Bruyn et al. (2011).

However, a number of issues need to be solved as part of this extension. One of them is that the properties and distribution of bare singulars, and the differences between them and weak definites across languages need to be properly determined and explained. To give an example of these differences, bare singulars present even more restrictions than weak definites on the acceptability of modification, even of kind-level adjectives. The following Dutch examples illustrate this:

- (372) a. *Maartje ging naar oude school.
 ‘Maartje went to old school.’
 b. *Maartje ging naar katholieke school.
 ‘Maartje went to Catholic school.’

Interestingly, a phenomenon occurring due to the illustrated modification restrictions serves to support the idea that weak definites and bare

singulars should receive the same semantic analysis. In Dutch, it seems that, when one needs to specify a subclass of the class of objects designated by a bare singular, and wants to use a kind-level adjective that is not allowed in a bare singular configuration, the alternative then is to use a modified weak definite. This tendency is suggested by Experiments 1 and 2, presented in Chapter 4, with the results of the interpretation of *de school* (in *naar de school gaan* ‘to go to the school’) and *de katholieke school* (in *naar de katholieke school gaan* ‘to go to the catholic school’). Whereas in the first VP the definite is interpreted as a regular, specific definite, in the second VP the modified definite is interpreted as a weak one.

A second issue that needs to be addressed as part of the extension of my analysis to bare singulars is how to deal with the fact that they do not have a visible definite determiner. To account for this difference, it would be necessary to consider alternative solutions such as postulating that bare singulars have a covert definite article or there is a syntactic movement of the noun from the noun phrase to the determiner phrase domain. Interestingly, these possibilities have been considered (e.g. Longobardi, 1994, 2001) for another domain in which there is alternation between bare and definite phrases, namely, the domain of proper names. This leads me to the second direction of future work, which I present in the coming section.

8.2.2 Weak definites as names of kinds

Works like Jespersen (1927), Carlson (1977), Dayal (2004), Krifka (2004), and Borik and Espinal (2012) have suggested that generic definites could be considered to be names of kinds. The context of this idea was the observed difference between generic definites and another kind-level phrase in English, that is, bare plurals. Each type of phrase has different semantic properties and distribution. For example, generic definites occur less commonly than bare plurals. To account for this, the idea that these authors entertain is that, whereas bare plurals make reference to all the members of a kind, generic definites rather refer to the kind itself. To formalize this reference, the strategy adopted by Dayal (2004) is to attribute to the definites a denotation typical of uniqueness-encoding definites, which only differs in that it involves atomic kinds.

But what if, instead, a denotation typical of proper names were assumed? In this project, I would like to pursue an analysis in these

terms. I would like to do so not only for generic definites but also for weak definites and bare singulars, as Zribi-Hertz and Jean-Louis (2012) have already suggested. The idea would be to exploit the insights from the literature on proper names of individuals (e.g. Kripke, 1972; Burge, 1973; Katz, 1977, 1994; Matushansky, 2006, 2008, 2013) and refine my account of weak definites.

There are two pieces of evidence that make this idea attractive. One is that, in the domain of proper names, the bare-definite alternation also exists both within the same language (373) and across languages (374):

- (373) a. I went to **The Hague** by train.
 b. I went to **Eindhoven** by train.
- (374) a. Fui a **la India**. (Spanish)
 b. Ik ging naar **India**. (Dutch)
 ‘I went to India.’

In some Romance languages like Spanish, this alternation can even occur with the same noun:

- (375) a. **Valeria** llegó a la fiesta sin su novio.
 b. **La Valeria** llegó a la fiesta sin su novio.
 ‘(The) Valeria came to the party without her boyfriend.’

A second piece of evidence is the existence of some uses of proper names which have an interpretation similar to that of weak definites (376). In these cases it seems clear that the names are indeed naming a kind rather than an individual:

- (376) a. My neighbor went to **Walmart** on Black Friday and I did too.
 (My neighbor and I could have gone to different Walmarts)
 b. Lola works at **McDonalds** and Alice does too.
 (Lola and Alice could be working at different McDonalds)

In Spanish the bare-definite alternation is also possible with this type of phrases:

- (377) a. Fui a **Walmart** el sábado y fue espantoso.

- b. Fui **al Walmart** el sábado y fue espantoso.
 ‘I went to Walmart on Saturday and it was awful.’

A refinement of my theory of weak definites in terms of names of kinds is worth pursuing because it has the potential to provide a straightforward explanation to the alternation between bare singulars and weak definites and to nicely link it to an analogous phenomenon in the domain of proper names. In addition, the idea is valuable because it would contribute to the study of different strategies to name kinds in natural language, which I believe is still an underexplored research area.

8.3 Other accounts of weak definites

Over the past three decades, several authors have observed the phenomenon of weak definites and provided ideas to account for it (e.g. Löbner, 1985; Birner and Ward, 1994; Abbott, 1999; Epstein, 2000; Carlson, 2006; Carlson et al., 2006; Aguilar-Guevara, 2008; Bosch and Cieschinger, 2010; Bosch, 2010; Aguilar-Guevara and Zwarts, 2011, 2014; Löbner, 2011; Löbner, 2012; Klein, 2011; Vogel, 2011; Klein et al., 2013; Zribi-Hertz and Jean-Louis, 2013). Very recently, some of these ideas have been developed in more detail in various works, in particular, Beyssade (2014), Carlson et al. (2014), Corblin (2014), Schwarz (2014), and Zwarts (2014). These works converge and complement the approach presented in this dissertation (and in Aguilar-Guevara and Zwarts, 2011, 2014) both in the properties of weak definites they account for and in the way they do so. Therefore, I consider important to acknowledge them and invite the reader to ponder them. In what follows I provide an informal summary of each analysis. I leave for future work the task of comparing all the alternatives in detail (see Beyssade, 2014; Carlson et al., 2014; Donazzan, 2014; Schwarz, 2014, which provide preliminary attempts).

The approaches can be classified in three categories according to the strategy they use. The first strategy is to treat weak definites as if they were not “true” definites but rather determinerless nouns semantically incorporated to the verbs that govern them. The second strategy is to treat weak definites as if they were regular, individual-level definites. The third strategy is to treat weak definites as phrases that rather refer to abstract objects.

8.3.1 Strategy 1. Weak definites as pseudo-incorporated phrases

Incorporation is the phenomenon whereby two separated words, a noun and transitive verb (e.g. *girl* and *choose*, respectively), form a unit behaving morphosyntactically and semantically as a single word, an intransitive verb (e.g. *girl-choose*). Pseudo-incorporation is when a noun and a verb form a semantic unit but still behave as separate words. That is to say, pseudo-incorporated nouns, despite differing from incorporated nouns in a number of morphosyntactic features (e.g. they do not necessarily occur in strict adjacency to the verb, they can be marked for case, the verb can show agreement with the noun, and certain types of modification may be acceptable), usually display the same semantic properties as incorporated nouns (e.g. obligatory narrow scope, inability to introduce discourse referents, number neutrality and meaning enrichment). Also, pseudo-incorporated nouns typically occur without any determiner or number marking.

Incorporation and pseudo-incorporation have been studied by several authors in different languages (e.g. Baker, 1988; van Geenhoven, 1998; Carlson, 2006; Chung and Ladusaw, 2003; Dayal, 2003, 2011; Farkas and de Swart, 2003; Espinal and McNally, 2011; Gehrke and Lekakou, 2013; Massam, 2001; Mithun, 1984; Sadock, 1980; Stvan, 2009; Vázquez-Rojas Maldonado, 2009). The analysis of pseudo-incorporation that Dayal in particular proposes is based on the idea that pseudo-incorporated nouns denote properties instead of entities, which combine with pseudo-incorporating verbs as modifiers rather than as arguments. Incorporating verbs, for their part, are versions of regular transitive verbs suppressing their internal argument by means of some semantic operations. The special semantics of nouns and incorporating verbs along with the conditions under which suppression of verb's internal argument takes place account for all the special properties of incorporated nouns (see Dayal, 2003, 2011; Espinal and McNally, 2011, for details).

Given that weak definites share a number of properties with pseudo-incorporated nouns (i.e. meaning enrichment, restricted range of nouns and verbs, restricted modification, narrow scope, and discourse referential defectiveness), it seems attractive to treat weak definites as instances of this phenomenon. Furthermore, weak definites are in complementary distribution with bare singulars, which, given their properties and their bareness, could easily be treated as incorporated nouns. This has been

suggested by Carlson (2006); Klein et al. (2013) and work thoroughly by Carlson et al. (2014). The proposal is that weak definite VPs (e.g. *take the bus*) have the usual syntactic structure that VPs with regular definites have, but a different compositional structure. In this structure, noun and verb form a unit (e.g. *bus-take*) whereas the definite article scopes over the incorporated VP so that it signals that the whole activity designated by the VP is a “familiar” type of activity.

8.3.2 Strategy 2. Weak definites as individual-denoting definites

8.3.2.1 Weak definites and kinds of events

Inspired by Carlson’s pseudo-incorporation approach, Schwarz (2014) treats weak definites as regular definites occurring in VPs that are interpreted as kinds of events. In his proposal, weak definites are individual-denoting definites which, due to familiar type-shifting mechanisms (Partee, 1986), are transformed into property-denoting phrases. These type-shifted definites combine with pseudo-incorporating versions of regular transitive verbs. Schwarz adopts Dayal’s (2011) denotation of pseudo-incorporating verbs, but adapts it in such a way that the result of applying pseudo-incorporating versions to type-shifted definites is not a property, but rather a kind of events. This kind corresponds to the largest plurality of reading events which have as their theme a unique individual with the property described by the definite. Kind-denoting VPs then transform, via some operations proposed by Schwarz, to combine with subjects and yield interpretable sentences.

8.3.2.2 Weak definites as dependent definites

Weak definites are not the only type of definites lacking unique reference to individuals. Other cases are those definites I generically call *dependent definites* (following Chierchia, 1995), although they comprise more than one phenomenon (i.e. *inferables* Prince (1981); *associative anaphora* Hawkins (1978) and *bridging* Clark (1975)). The common feature of all these definites is the value of their reference depending on the preceding context, as shown in the following example:

- (378) At a shooting range, each soldier was assigned a different target and had to shoot at it. That soldier didn’t hit **the target**.

(adapted from Winter, 2000)

Now consider the following version of the example above, where the same definite interacts with a quantified phrase. In this example, the value of the definite covaries with that of the quantifier:

- (379) At a shooting range, each soldier was assigned a different target and had to shoot at it. At the end of the shooting we discovered that every soldier hit **the target**.

The lack of unique reference of this definite can also be observed in VP-ellipsis sentences:

- (380) At a shooting range, each soldier was assigned a different target and had to shoot at it. At the end of the shooting we discovered that soldier A hit **the target** and soldier B did too.

As we know, weak definites also display sloppy reading in VP-ellipsis sentences (381) and ‘narrow’ scope interpretations when interacting with quantifiers (382):

- (381) Fausto took **the train** to Nijmegen and Ovidio did too.
(Fausto and Ovidio could have taken different trains)
- (382) Each princess took **the train** to Nijmegen.
(Each princess could have taken a different train)

Therefore it is attractive to analyze weak definites as dependent definites. This has been suggested by some authors (Aguilar-Guevara, 2008; Bosch and Cieschinger, 2010; Bosch, 2010; Corblin, 2011; Asic and Corblin, 2012) and worked out in some detail by Corblin (2014). Dependent interpretations of definites have been accounted for by a number of authors (see, for instance, von Stechow, 1994; Chierchia, 1995; Winter, 2000; Elbourne, 2005; Schwarz, 2009). The general strategy they pursue is to include in the denotation of the definites a variable which behaves as a pronoun. That is to say, the variable can either be bound by operators or receive a value from a domain, which can be subject to restriction. In this domain there must be one and only one individual satisfying the descriptive content of the definites.

8.3.3 Strategy 3. Weak definites refer to abstract objects

Three accounts are articulated around the idea that weak definites refer to abstract objects rather than to ordinary individuals. One approach is the one defended in this dissertation (and in Aguilar-Guevara and Zwarts, 2011, 2014). The other two approaches are Beyssade (2014) and Zwarts (2014).

8.3.3.1 Weak definites and reference to types

Beyssade (2014) exploits the classical philosophical distinction between *type* and *tokens* (the former being a general sort of thing, and the latter its particular concrete instances) and proposes to analyze weak definites as phrases referring to types. The details of how to implement this idea are not developed. However, she does specify that whether a definite is interpreted either as a type-level phrase or as token-level phrase depends on the context in which its embedding sentence is uttered. If in the context there is more than one token satisfying the descriptive content of the definite, then the definite will be interpreted as an expression referring to a type.

8.3.3.2 Weak definites and reference to functional roles

Inspired by Löbner's (1985) and Epstein's (2000) ideas, Zwarts (2014) reformulates our kind-referring analysis in terms of reference to *roles* in *frames* (Fillmore, 1982; Barsalou, 1992; Petruck, 1996). A frame is a structure of related concepts, called *roles*, which represent stereotyped situations or scenarios, for example, birthday parties, restaurants or cities. Some of these roles represent functional objects, that is, objects created for a purpose (recall the definition of functional objects in Chapter 5, Subsection 5.2.1. For example, the frame "city" consists of the functional roles "hospital", "church", "park" etc.

Zwarts proposes that weak definites, instead of referring to kinds, refer to roles in a frame, which, by definition are unique with respect to the frame. Role-referring definites combine with regular transitive verbs due to the intervention of an operation habilitating the verbs to operate at the level of roles. This operation, apart from mapping the verbs to a frame-based interpretation, adds to the new denotation information about the function of the objects represented by the role in question.

8.3.4 Final remarks

As mentioned before, a detailed comparative evaluation of the different approaches to weak definites is left for future work. However, to conclude this subsection (and this dissertation) I would like to briefly situate my analysis with respect to the others mentioned before by remarking some of the choices made in it, and the main reasons motivating the choices. First of all, my proposal treats weak definites as true definites, that is, as the result of a uniqueness-encoding definite article combined with a noun denoting a property. One reason to opt for this treatment was the reasoning that, if weak definites look like definite phrases, they should be analyzed as such. Most of the proposals presented in this section follow this reasoning, except for the one following Strategy 1, that is, the pseudo-incorporation approach.

A second choice made in my proposal is not analyzing weak definites as phrases denoting ordinary individuals. One evident motivation to do so was the problem that, in order to maintain an individual-level denotation, it is necessary to explain in what sense weak definites correspond to unique ordinary individuals despite the linguistic evidence suggesting the opposite. Another motivation to avoid analysing weak definites as denoting ordinary individuals is that this approach grants relevance to this level. The problem with this is that, although, for example, saying that someone went to the supermarket does mean that someone went to a supermarket, the individuality of the actual objects satisfying the descriptive content of weak definites does not really matter. From the proposals presented above, those following Strategy 2, namely, reference to individuals, deal with the mentioned problems in different ways.

The third choice made in my proposal is treating weak definites as kind-referring expressions. The main reason to do so relates to another empirical choice, namely, to consider generic and weak definites to be different faces of a same phenomenon. As seen before, the literature has provided sufficient reasons to treat generic definites as kind-referring phrases. That is why considering attributing to weak definites the same denotation was a natural option. To my knowledge, from all the existing approaches, my proposal is the only one giving priority to account for the parallelisms between generic and weak definites. Also, it is the only one treating weak definites as referring to kinds. Approaches following Strategy 3, namely, reference to abstract objects, are very close to this treatment but, instead, they assume reference to other types of objects.

The last choice I would like to remark here is that my proposal involves a number of mechanisms independently motivated in the formal semantics literature, like reference to kinds, the Realization Relation, type shifts and the iota-operator. The reason to opt for this choice is that it has proven to be empirical and methodologically adequate.

APPENDIX A

Experiment 5. Assessing the strength of typical activities

A.1 Introduction¹

With the aim of providing support to the proposal that weak nouns, in contrast with regular nouns, are associated with stereotypical purposes, the present appendix presents Pretest 1, Pretest 2, and Experiment 5. Pretest 1 identified nouns designating locations associated with the most typical activities in order to use them in Experiment 5. Pretest 2 identified nouns designating agents associated with the most typical activities to use them in Experiment 5. Finally, Experiment 5 tested the interpretation of sentences of the type *The AGENT NOUN went to the LOCATION NOUN*. The goal of the study was to assess the strength of typical activities associated with unmodified and I(ndividual level)-modified regular and weak definites in order to confirm that those activities associated with weak definites are stronger than those associated with regular definites and that this strength remains even if the weak definite reading is cancelled by means of a I-modifier. The three studies are presented in this appendix instead of being part of the body of this dissertation because, although I believe that they (at least indirectly) substantiate the proposal just

¹This appendix is partially based on Schulpen's (2011) master thesis, and on a paper written in collaboration with her (i.e. Aguilar-Guevara and Schulpen, 2011).

mentioned, the connection between the facts revealed by the studies and the special nature of weak nouns is not so clear and more studies are still necessary in order to validate it. Therefore, here I just present all the details of the experiments (including the list of tested items), provide the results as they were obtained from the statistical analyses, and apply minimum interpretation to the results so that the reader can judge by himself what they are actually suggesting.

The appendix is organized as follows. Section A.2 presents Pretest 1 and 2. Section A.3 presents Experiment 5. Section A.4 provides a general discussion. Section A.5 provides all the items used in Experiment 5.

A.2 Pretests

A.2.1 Pretest 1. Locations and typical activities

This study identified typical activities associated with weak and regular nouns designating locations. The goal was to find the most suitable items to construct the materials of Experiment 5.

A.2.1.1 Materials

The materials of this test consisted of booklets of nineteen pages each containing one location noun and some empty lines. One front page with instructions preceded the eighteen pages. The nouns were presented in bare form to avoid any effect that could be attributed to a determiner or a governing verb.

Thirty-six nouns were used in total, eighteen weak nouns and eighteen regular nouns. They were randomly split into two lists, both containing nine weak definites and nine regular definites. Both lists were then ordered quasi-randomly so that no more than two weak definites or regular definites occurred next to each other. The reversed versions of these lists were also used. Both the original lists and their reversed versions were also presented with the first eight items and the last nine items in reversed order. Thus, a total of eight lists were used.²

²Due to a printing mistake, the last item in the original lists was the same as in the reversed versions.

A.2.1.2 Method

Thirty-eight native speakers of Dutch participated in this experiment. They were asked to read each noun and to write down as many reasons as they could think of why someone would go to the location designated by the noun. The participants had thirty seconds per noun to complete the task. After this lapse, a beep indicated them that they must turn the page and repeat the process for the next noun. The participants were asked not to turn the page before the beep sounded.

A.2.1.3 Results

Based on overall frequency, the most often recurring activities related to weak and regular nouns were identified. To determine the recurrence of these most typical activities, the data were analyzed as follows. First, for each location noun, all the typical activities mentioned by the participants during the elicitation were enlisted. Then, for each of these activities the percentage of participants that mentioned it was calculated. Then, for each item the activity with the highest percentages (the one most often mentioned) was selected. The entire list of weak and regular nouns as well as their corresponding most typical activity are presented in Tables A.1 and A.2 respectively.

A.2.2 Pretest 2. Agents and typical activities

This study identified typical activities associated with nouns referring to agents in order to determine the most suitable items for Experiment 5.

A.2.2.1 Materials

In this study, 13 agent nouns intuitively judged to be associated with typical activities (e.g. mailman) were used. They were presented to the participants in a booklet in which each page contained one of the agent nouns embedded in a sentence of the type *A typical reason for a(n) AGENT to go somewhere is...*, followed by some empty lines. One front page with instructions preceded the items.

A.2.2.2 Method

Twenty-four native speakers of Dutch participated in this experiment. They were asked to read each sentence and then to complete it by writing

Weak nouns	Most typical activities
Apotheek ‘drugstore’	To get medication.
Bank ‘bank’	To do banking transactions.
Bibliotheek ‘library’	To study.
Bioscoop ‘??movie theatre’	To watch a movie.
Bos ‘forest’	To take a walk.
Fietsenmaker ‘bicycle repair’	To get your bike fixed.
Rechtbank ‘court’	For justice purposes.
Sauna ‘sauna’	To relax.
Snackbar ‘snack bar’	To get food.
Sportschool ‘gym’	To exercise.
Station ‘train station’	For traveling.
Strand ‘beach’	To have fun with beach activities.
Supermarkt ‘supermarket’	To buy groceries.
Tandarts ‘dentist’	For dental care.
Universiteit ‘university’	To study.
Vliegveld ‘airport’	For travelling.
Ziekenhuis ‘hospital’	For medical help.
Zwembad ‘swimming pool’	To swim.

TABLE A.1: Typical activities associated with weak location nouns.

Regular Nouns	Most typical activities
Bejaardentehuis ‘retirement home’	To visit old people.
Boerderij ‘farm’	To watch farm life.
Bowlingbaan ‘bowling alley’	To bowl.
Café ‘cafe’	To have a drink.
Concert ‘concert’	To listen to music.
Fabriek ‘factory’	To work.
Hotel ‘hotel’	To stay there overnight.
Kasteel ‘castle’	To do some sightseeing.
Klooster ‘convent’	For spiritual reasons.
Meer ‘lake’	To have fun with lake activities.
Monument ‘monument’ ³	To do some sightseeing.
Museum ‘museum’	To have a cultural outing.
Restaurant ‘restaurant’	To have dinner.
School ‘school’	To learn things.
Showroom ‘showroom’	To look at or buy products.
Studio ‘studio’	To record something.
Voetbalveld ‘soccer field’	To play soccer.
Landgoed ‘estate’	To do some sightseeing.

TABLE A.2: Typical activities associated with regular location nouns.

Agent	Most typical activities
Brandweerman ‘fire fighter’	To fight fires.
Pizzabezorger ‘pizza delivery guy’	To deliver pizza.
Schoonmaker ‘cleaner’	To clean.
Ramenlapper ‘window cleaner’	To clean windows.
Bloemist ‘florist’	To sell flowers.
Postbode ‘mailman’	To deliver mail.
Journalist ‘journalist’	To report on something.
Wegenwacht ‘AAA patrolman’	To help people with car trouble.
Taxichauffeur ‘taxi driver’	To bring someone somewhere.
Koerier ‘delivery guy’	To deliver packages.
Deurwaarder ‘bailiff’	To collect money.
Krantenbezorger ‘newspaper delivery guy’	To deliver newspapers.
Vertegenwoordiger ‘representative’	To represent someone or a company.

TABLE A.3: Typical activities associated with agent nouns.

down as many reasons they could think of for the agent indicated in the sentence to go to an unspecified location. As in Pretest 1, they were given thirty seconds per item, after which a beep sounded and they were to turn the page.

A.2.2.3 Results

Following the same procedure used in Pretest 1, the most recurring activity associated with each noun was identified. Table A.3 presents the entire list of most recurring activities. From this list, the 12 most suitable items were selected for testing in Experiment 5. This means that the noun *vertegenwoordiger* (‘representative’) was excluded.

A.3 Experiment 5. Assessing the strength of typical activities

Experiment 5 tested the strength of typical activities associated with different types of definites expressing locations. This study was inspired

by an experiment reported in Klein et al. (2009) (and also in Klein, 2011; Klein et al., 2013). In this study, the participants were presented with sentences of the type *The AGENT went to the LOCATION*. The agents were always associated with typical activities (e.g. a postman is associated with the typical activity of delivering mail). The locations were expressed either by weak or regular definites. The participants were asked to read the sentences and to visualize the scene each sentence described. After that, they were asked whether or not they had imagined the agent as performing his typical purpose. The results showed that participants were more likely to say that the agent was engaged in his typical activity in the regular definite condition than in the weak definite condition.

Building on Klein et al.’s design, Experiment 5 again tested the interpretation of sentences of the type *The AGENT went to the LOCATION*. This time, care was taken that both the agent and the location were associated with typical activities that clearly conflict with each other so that one must override the other in order for the sentences to be interpreted. For example, the typical activity associated with a mailman is package delivery whereas the typical activity associated with a hospital is medical treatment. Therefore, the sentence *the mailman went to the hospital* can be interpreted either with the implication that the mailman went to the hospital to deliver a package (i.e. the sentence has an *agent-activity interpretation*) or with the implication that he went there for medical reasons (i.e. the sentence has a *location-activity interpretation*).

Experiment 5 aimed to corroborate that activities associated with weak definite locations are stronger than those associated with regular definite locations. Assuming the proposal –developed in Chapter 5– that only the lexical meaning of weak nouns specifies that the purposes associated with the objects designated by the nouns are stereotypical, a difference between the strength of activities associated with regular and weak definite is expected. Therefore, the study predicted that weak definite sentences were going to trigger more location-activity interpretations than regular definite sentences.

Experiment 5 also aimed to test whether or not the strength of typical activities corresponding to weak definite sentences in fact depend on the weak definite configuration. To do so, I-modified weak and regular definites were also included. Assuming that I-modification blocks the weak reading of weak definites –as seen in Chapter 4– the idea intended to prove was that, if the strength of these activities is dependent, I-modification should significantly affect the capacity of weak definites

to override the agent typical activity. If, on the contrary, this strength is independent of the weak definite configuration, then I-modification should not change the difference between sentences with weak definites and regular definites.

A.3.1 Materials

This study tested a total of 48 target sentences belonging to the following four conditions (i.e. 12 sentences per condition): sentences with unmodified weak definites (383), sentences with I-modified weak definites (384), sentences with unmodified regular definites (385), and sentences with I-modified regular definites (386). Each sentence contained one of the 12 agent definites selected from Pretest 2. Likewise, each sentence contained one of the 24 location weak and regular definites selected from Pretest 1, or one of the I-modified versions of each of these definites. It is important to remark that the modified versions were constructed with the I-adjectives which most strongly blocked sloppy readings of weak definites in Experiment 1. Also, the agent definites appeared modified in every sentence in order to counterbalance a possible saliency effect of the location noun modifiers.

- (383) *sentences with unmodified weak definites*
De lange postbode ging naar het ziekenhuis.
'The tall mailman went to the hospital.'
- (384) *sentences with I-modified weak definites*
De lange postbode ging naar het nieuwe ziekenhuis.
'The tall mailman went to the new hospital.'
- (385) *sentences with unmodified regular definites*
De lange postbode ging naar het restaurant.
'The tall mailman went to the restaurant.'
- (386) *sentences with I-modified regular definites*
De lange postbode ging naar het nieuwe restaurant.
'The tall mailman went to the new restaurant.'

Twelve filler sentences were intercalated into the target sentences. Their structure was similar to the test items, but sometimes contained different types of agents, verbs and location nouns. An example is shown in (387). Care was taken to ensure that the fillers would not introduce an overall bias for either the agent-activity or the location-activity interpretation.

- (387) Michiel reed naar het gebouw.
 ‘Michael drove to the building.’

The sentences were presented to participants in booklets containing three sentences of each condition plus 12 fillers. One of the sides of each paper contained the sentences, and the other side contained the question *why did he/she do that?* plus some empty lines.

A.3.2 Method

Sixty-two native speakers of Dutch participated in this experiment. They were instructed to read in nine seconds each sentence and to imagine the scene it described. After this lapse, a beep signaled that they were to turn the page in order to describe the scene they had imagined by answering the corresponding question in 18 seconds. Based on the results of Pretests 1 and 2, participants’ answers were coded as being either a location activity interpretation or an agent activity interpretation.

A.3.3 Predictions

This study had three predictions. *Prediction 1* was that participants prefer the location activity interpretation over the agent activity interpretation more often for sentences with weak definites than for sentences with regular definites. *Prediction 2* was a greater preference for the location activity interpretation for weak definites than for modified weak definites. Finally, *Prediction 3* was an interaction effect between type of definite and modification, with modification blocking the location activity interpretation more strongly on weak definite sentences than on regular definite sentences.

A.3.4 Results

An lmer analysis revealed a main effect for type of definite ($\beta = 0.3497$, $SE = 0.1088$, $p(\text{MCMC}) < .0001$), which indicates that participants chose the location activity interpretation significantly more often in the weak definite condition than in the regular definite condition. On the other hand, there was no significant effect of modification ($\beta = -.1188$, $SE = .1003$, $p(\text{MCMC}) = .1896$). Likewise, there was no interaction effect between type of definite and modification ($\beta = -.0009$, $SE = .1496$, $p(\text{MCMC}) = .9714$), which confirms that modification did not affect significantly participants’

Type of definite		Type of interpretation		
		LocPI	LocPI	total
regular definite	non-modified	93 (54.4%)	78 (45.6%)	171
	modified	116 (67.1%)	57 (32.9%)	173
	total	209 (60.8%)	135 (39.2%)	344
weak definite	non-modified	38 (21.7%)	137 (78.3%)	175
	modified	53 (31.5%)	115 (68.5%)	168
	total	91 (26.5%)	252 (73.5%)	343

TABLE A.4: Observations per type of definite corresponding to LocPI and to LocPI .

preferences. A graphical presentation of these results can be seen in Figure A.1. The exact number and relative frequency of times that the location activity interpretation and the agent activity interpretation were elicited per condition can be found in Table A.4.

A.4 General discussion

Experiment 5 predicted that, as the typical activities associated with weak definites are stronger than those associated with regular definites, weak definite sentences were going to trigger more location-activity interpretations than regular definite sentences. The data analyses of the study revealed that, in fact, participants significantly preferred the location-activity interpretation over the agent-activity interpretation more often for weak definite sentences than for regular definite sentences. This confirms that the activities associated with weak definites are stronger than those associated with regular definites.

On the other hand, the data analyses also revealed that I-modified weak definites triggered significantly more location-activity interpretations than I-modified regular definites. Assuming that I-modifiers block the weak reading of definites, this second result suggests that, although the typical activities associated with weak definites are stronger than those associated with regular definites, they are independent of the weak definite configuration. In other words, they are due to something that is certainly part of weak definites but not exclusive to them.

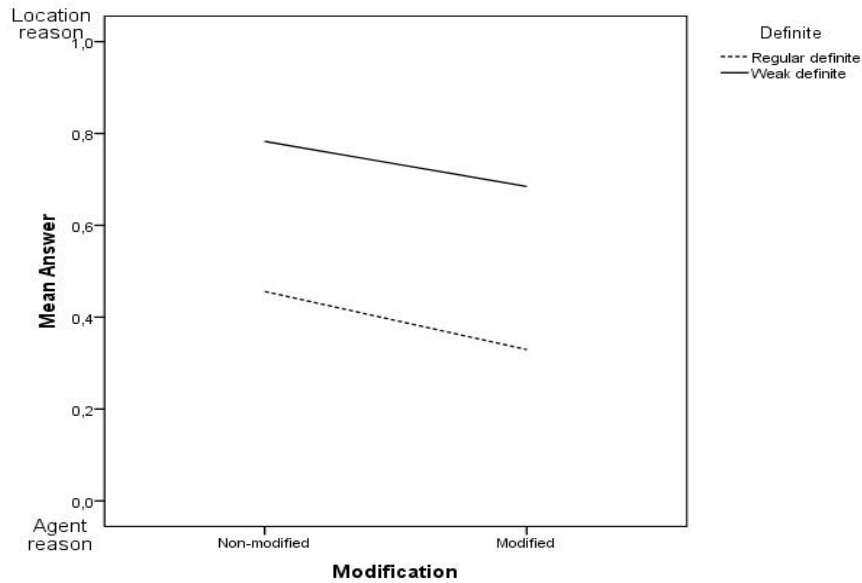


FIGURE A.1: Relative frequency of times the agent activity interpretation and the location activity interpretation (0=agent activity interpretation, 1=location activity interpretation) were elicited, split by type of definite and by presence/absence of modification.

One of the elements of weak definites which also occur in other constructions are the nouns. In Chapter 5, I propose that these nouns differ from those not occurring in weak definites in that only the former are associated with stereotypical purposes in their lexical semantics. I believe that this proposal receives support from Experiment 5: sentences with non-modified weak definites and with I-modified weak definites trigger more location activity interpretations than sentences with non-modified and I-modified regular definites because the former, unlike the latter, contain nouns associated with stereotypical purposes in their lexical semantics. I believe that this is right, but also acknowledge that validating the correlation between the strength of activities associated with weak definites, and the fact that only weak nouns include the specification of a stereotypical purpose in their lexical semantics requires further research.

A.5 Items used in Experiment 5

A.5.0.1 Items with unmodified weak definites

- (388) De getatoeëerde pizzabezorger ging naar de bank.
'The tattooed pizza deliveryman went to the bank.'
- (389) De kleine bloemist ging naar de rechtbank.
'The little florist went to court.'
- (390) De knappe journalist ging naar het bos.
'The handsome reporter went to the forest.'
- (391) De blonde brandweerman ging naar de snackbar.
'The blonde fireman went to the snack bar.'
- (392) De bebaarde krantenbezorger ging naar de sauna.
'The bearded newspaper deliveryman went to the sauna.'
- (393) De gespierde schoonmaker ging naar de tandarts.
'The muscular janitor went to the dentist.'
- (394) De dikke ramenlapper ging naar de supermarkt.
'The fat window cleaner went to the supermarket.'
- (395) De magere deurwaarder ging naar de fietsenmaker.
'The skinny bailiff went to the bicycle repair.'
- (396) De kale taxichauffeur ging naar de apotheek.
'The bare taxi driver went to the drugstore.'
- (397) De lange postbode ging naar het ziekenhuis.
'The tall postman went to the hospital.'
- (398) De jonge wegenwacht ging naar de bioscoop.
'The young patrolman went to the ?movie theatre.'
- (399) De puistige koerier ging naar het museum.
'The pimply messenger went to the museum.'

A.5.0.2 Items with unmodified regular definites

- (400) De magere deurwaarder ging naar het landgoed.
'The skinny bailiff went to the estate.'
- (401) De kale taxichauffeur ging naar het concert.
'The bald taxi driver went to the concert.'

- (402) De lange postbode ging naar het restaurant.
'The tall postman went to the restaurant.'
- (403) De dikke ramenlapper ging naar het hotel.
'The fat window cleaner went to the hotel.'
- (404) De bebaarde krantenbezorger ging naar het kasteel.
'The bearded newspaper deliveryman went to the castle.'
- (405) De kleine bloemist ging naar de showroom.
'The little florist went to the showroom.'
- (406) De knappe journalist ging naar het voetbalveld.
'The handsome reporter went to the soccer field.'
- (407) De blonde brandweerman ging naar de bowlingbaan.
'The blonde fireman went to the bowling alley.'
- (408) De getatoeëerde pizzabezorger ging naar de boerderij.
'The tattooed pizza deliveryman went to the farm.'
- (409) De jonge wegenwacht ging naar het meer.
'The young patrolman went to the lake.'
- (410) De gespierde schoonmaker ging naar het klooster.
'The muscled janitor went to the monastery.'
- (411) De puistige koerier ging naar het monument.
'The pimply messenger went to the monument.'

A.5.0.3 Items with I-modified weak definites

- (412) De getatoeëerde pizzabezorger ging naar de verbouwde bank.
'The tattooed pizza deliveryman went to the converted bank.'
- (413) De kleine bloemist ging naar de grijze rechtbank..
'The little florist went to the gray court.'
- (414) De knappe journalist ging naar het smalle bos.
'The handsome reporter went to the small forest.'
- (415) De blonde brandweerman ging naar de witte snackbar.
'The blonde fireman went to the white snack bar.'
- (416) De bebaarde krantenbezorger ging naar de rustige sauna.
'The bearded newspaper deliveryman went to the quiet sauna.'
- (417) De gespierde schoonmaker ging naar de moderne tandarts.
'The muscular janitor went to the modern dentist.'

- (418) De dikke ramenlapper ging naar de grote supermarkt.
'The fat window cleaner went to the supermarket.'
- (419) De magere deurwaarder ging naar de oude fietsenmaker.
'The skinny bailiff went to the old bicycle repair.'
- (420) De kale taxichauffeur ging naar de drukke apotheek.
'The bare taxi driver went to the busy drugstore.'
- (421) De lange postbode ging naar het nieuwe ziekenhuis.
'The tall postman went to the new hospital.'
- (422) De jonge wegenwacht ging naar de kleine bioscoop.
'The young patrolman went to the ??movie theatre.'

A.5.0.4 Items with I-modified regular definites

- (423) De magere deurwaarder ging naar het oude landgoed.
'The skinny bailiff went to the old estate.'
- (424) De kale taxichauffeur ging naar het drukke concert.
'The bald taxi driver went to the busy concert.'
- (425) De lange postbode ging naar het nieuwe restaurant.
'The tall postman went to the new restaurant.'
- (426) De dikke ramenlapper ging naar het grote hotel.
'The fat window cleaner went to the big hotel.'
- (427) De bebaarde krantenbezorger ging naar het rustige kasteel.
'The bearded newspaper deliveryman went to the quiet castle.'
- (428) De kleine bloemist ging naar de grijze showroom.
'The little florist went to the gray showroom.'
- (429) De knappe journalist ging naar het smalle voetbalveld.
'The handsome reporter went to the small football field.'
- (430) De blonde brandweerman ging naar de witte bowlingbaan.
'The blonde fireman went to the white bowling.'
- (431) De getatoeëerde pizzabezorger ging naar de verbouwde boerderij.
'The tattooed pizza deliveryman went to the old farmhouse.'
- (432) De jonge wegenwacht ging naar het kleine meer.
'The young patrolman went to the little lake.'
- (433) De gespierde schoonmaker ging naar het moderne klooster.
'The muscled janitor went to the modern monastery.'

- (434) De puistige koerier ging naar het vierkante monument.
'The pimply messenger went to the square monument.'

A.5.0.5 Fillers

- (435) Hans rende de lichte kamer uit.
'Hans ran the light room.'
- (436) Michiel reed naar het gebouw.
'Michael drove to the building.'
- (437) De zwetende vrouw fietste naar de crèche.
'The sweaty woman cycled to the nursery.'
- (438) Het meisje nam de trein naar Parijs.
'The girl took the train to Paris.'
- (439) De hockeyer liep naar de dug-out.
'The hockey player walked to the dugout.'
- (440) Jan sprintte naar de vrije parkeerplaats.
'Jan sprinted to the free parking.'
- (441) De loodgieter reed naar het huis.
'The plumber drove to the house.'
- (442) De zenuwachtige violist kwam het podium op.
'The nervous violinist came on stage.'
- (443) Lotte ging naar de Tweede Kamer.
'Lotte went to the Second Chamber.'
- (444) De clown liep naar de tent.
'The clown walked into the tent.'
- (445) De vastberaden judoka stapte de mat op.
'The determined judoka stepped on the mat.'
- (446) De acteur sprong op de aangelegde boot.
'The actor jumped onto the landscaped boat.'

APPENDIX B

Materials of Experiment 1 and 2

B.1 Introduction

The following items were used in Experiment 1 and 2, where the effect of I-modifiers and K-modifiers were tested in weak and regular definites occurring in VP-ellipsis sentences. As the example in (447) illustrates, each item consisted of a sentence plus two possible interpretations. The interpretation in *a* corresponds to the strict reading of the definite and the one in *b* corresponds to the sloppy reading:

- (447) Marja ging naar het station en Saskia ook.
‘Marja went to the station and Saskia did too’
- a. Marja en Saskia gingen allebei naar hetzelfde station.
‘Marja and Saskia both went to the same station’
 - b. Marja en Saskia gingen allebei naar een verschillend station.
‘Marja and Saskia each went to a different station’

For the sake of space, and given that both the strict and the sloppy interpretation of each sentence were presented always with the same format and the only thing that changed was the target noun, in the following pages I will only list the sentences of each item (and their translation to English), and omit the paraphrases of the two possible interpretations.

This appendix is organized as follows. Section B.2 presents the materials used in Experiment 5. Section B.3 presents the materials used in Experiment 6. All these materials have been previously reported in Maartje Sculpen's MA thesis (Sculpen, 2011).

B.2 Materials of Experiment 1

This section is organized as follows. B.2.1 presents the materials with non-modified weak definites. B.2.2 presents the materials with non-modified regular definites. B.2.3 presents the materials with I-modified weak definites. B.2.4 presents the materials with I-modified regular definites. B.2.5 presents the fillers of Experiment 1.

B.2.1 Items with non-modified weak definites

- (448) Marja ging naar het station en Saskia ook.
'Marja went to the station and Saskia did too'
- (449) Julia ging naar de bank en Adriaan ook.
'Julia went to the bank and Adrian did too'
- (450) Frank ging naar de rechtbank en Anne ook.
'Julia went to the court and Anne did too'
- (451) Linda ging naar het bos en Els ook.
'Linda went to the forest and Els did too'
- (452) Siri ging naar de snackbar en Pim ook.
'Siri went to the snack bar and Els did too'
- (453) Rob ging naar de sauna en Kim ook.
'Rob went to the sauna and Kim did too'
- (454) Esther ging naar de tandarts en David ook.
'Esther went to the dentist and David did too'
- (455) Daan ging naar de supermarkt en Eefje ook.
'Daan went to the supermarket and Eefje did too'
- (456) Sandra ging naar de sportschool en Edwin ook.
'Sandra went to the gym and Edwin did too'
- (457) Rianne ging naar de fietsenmaker en Lotte ook.
'Rianne went to the bicycle repair and Lotte did too'

- (458) Hettie ging naar het zwembad en Gerard ook.
'Hettie went to the swimming pool and Gerard did too'
- (459) Joep ging naar de universiteit en Willemijn ook.
'Joep went to the university and Willemijn did too'
- (460) Leo ging naar de apotheek en Tom ook.
'Leo went to the drugstore and Tom did too'
- (461) Michiel ging naar de bibliotheek en Evelien ook.
'Michiel went to the library and Evelien did too'
- (462) Jan ging naar het ziekenhuis en Marie ook.
'Jan went to the hospital and Marie did too'
- (463) Dirk ging naar het vliegveld en Magda ook.
'Dirk went to the airport and Magda did too'
- (464) Lies ging naar de bioscoop en Sophie ook.
'Lies went to the movie theatre and Sophie did too'
- (465) Bart ging naar het strand en Elise ook.
'Bart went to the beach and Elise did too'

B.2.2 Items with non-modified regular definites

- (466) Stan ging naar het landgoed en Joran ook.
'Stan went to the property and Joran did too'
- (467) Femke ging naar het concert en Inge ook.
'Femke went to the concert and Inge did too'
- (468) Loes ging naar het restaurant en Erik ook.
'Loes went to the restaurant and Erik did too'
- (469) Robert ging naar het hotel en Liesbeth ook.
'Robert went to the hotel and Liesbeth did too'
- (470) Vincent ging naar het café en Henk ook.
'Vincent went to the café and Henk did too'
- (471) Hans ging naar het museum en Bea ook.
'Hans went to the museum and Bea did too'
- (472) Luuk ging naar het kasteel en Jaap ook.
'Luuk went to the castle and Jaap did too'
- (473) Ruud ging naar de showroom en Imke ook.
'Ruud went to the showroom and Imke did too'

- (474) Joost ging naar het voetbalveld en Maaïke ook.
'Joost went to the soccer field and Maaïke did too'
- (475) Floor ging naar de bowlingbaan en Sam ook.
'Floor went to the bowling alley and Sam did too'
- (476) Laura ging naar de school en Ruben ook.
'Laura went to the school and Ruben did too'
- (477) Harrie ging naar de boerderij en Ben ook.
'Harrie went to the farm and Ben did too'
- (478) John ging naar de fabriek en Marleen ook.
'John went to the factory and Marleen did too'
- (479) Monique ging naar het meer en Roel ook.
'Monique went to the lake and Roel did too'
- (480) Renske ging naar het klooster en Olaf ook.
'Renske went to the convent and Olaf did too'
- (481) Anne-Marie ging naar het monument en Sebastiaan ook.
'Anne-Marie went to the monument and Sebastiaan did too'
- (482) Hanna ging naar de studio en Noortje ook.
'Hanna went to the studio and Noortje did too'
- (483) Roos ging naar het bejaardentehuis en Jeroen ook.
'Roos went to the retirement home and Jeroen did too'

B.2.3 Items with I-modified weak definites

- (484) Marja ging naar het rommelige station en Saskia ook.
'Marja went to the messy station and Saskia did too'
- (485) Julia ging naar de sjieke bank en Adriaan ook.
'Julia went to the posh bank and Adrian did too'
- (486) Frank ging naar de bekladde rechtbank en Anne ook.
'Julia went to the vandalized court and Anne did too'
- (487) Linda ging naar het smalle bos en Els ook.
'Linda went to the small forest and Els did too'
- (488) Siri ging naar de gezellige snackbar en Pim ook.
'Siri went to the cozy snack bar and Els did too'
- (489) Rob ging naar de vieze sauna en Kim ook.
'Rob went to the dirty sauna and Kim did too'

- (490) Esther ging naar de hippe tandarts en David ook.
'Esther went to the trendy dentist and David did too'
- (491) Daan ging naar de drukke supermarkt en Eefje ook.
'Daan went to the busy supermarket and Eefje did too'
- (492) Sandra ging naar de populaire sportschool en Edwin ook.
'Sandra went to the popular gym and Edwin did too'
- (493) Rianne ging naar de oude fietsenmaker en Lotte ook.
'Rianne went to the old bicycle repair and Lotte did too'
- (494) Hettie ging naar het grote zwembad en Gerard ook.
'Hettie went to the big swimming pool and Gerard did too'
- (495) Joep ging naar de kleine universiteit en Willemijn ook.
'Joep went to the small university and Willemijn did too'
- (496) Leo ging naar de stoffige apotheek en Tom ook.
'Leo went to the dusty drugstore and Tom did too'
- (497) Michiel ging naar de mooie bibliotheek en Evelien ook.
'Michiel went to the beautiful library and Evelien did too'
- (498) Jan ging naar het nieuwe ziekenhuis en Marie ook.
'Jan went to the new hospital and Marie did too'
- (499) Dirk ging naar het rustige vliegveld en Magda ook.
'Dirk went to the quiet airport and Magda did too'
- (500) Lies ging naar de volle bioscoop en Sophie ook.
'Lies went to the full movie theatre and Sophie did too'
- (501) Bart ging naar het uitgestrekte strand en Elise ook.
'Bart went to the long beach and Elise did too'

B.2.4 Items with I-modified regular definites

- (502) Stan ging naar het grote landgoed en Joran ook.
'Stan went to the big property and Joran did too'
- (503) Femke ging naar het drukke concert en Inge ook.
'Femke went to the busy concert and Inge did too'
- (504) Loes ging naar het hippe restaurant en Erik ook.
'Loes went to the posh restaurant and Erik did too'
- (505) Robert ging naar het sjieke hotel en Liesbeth ook.
'Robert went to the posh hotel and Liesbeth did too'

- (506) Vincent ging naar het rustige café en Henk ook.
'Vincent went to the quiet café and Henk did too'
- (507) Hans ging naar het volle museum en Bea ook.
'Hans went to the full museum and Bea did too'
- (508) Luuk ging naar het mooie kasteel en Jaap ook.
'Luuk went to the beautiful castle and Jaap did too'
- (509) Ruud ging naar de kleine showroom en Imke ook.
'Ruud went to the small showroom and Imke did too'
- (510) Joost ging naar het smalle voetbalveld en Maaïke ook.
'Joost went to the small soccer field and Maaïke did too'
- (511) Floor ging naar de populaire bowlingbaan en Sam ook.
'Floor went to the popular bowling alley and Sam did too'
- (512) Laura ging naar de vieze school en Ruben ook.
'Laura went to the dirty school and Ruben did too'
- (513) Harrie ging naar de stoffige boerderij en Ben ook.
'Harrie went to the dusty farm and Ben did too'
- (514) John ging naar de rommelige fabriek en Marleen ook.
'John went to the messy factory and Marleen did too'
- (515) Monique ging naar het uitgestrekte meer en Roel ook.
'Monique went to the long lake and Roel did too'
- (516) Renske ging naar het oude klooster en Olaf ook.
'Renske went to the old convent and Olaf did too'
- (517) Anne-Marie ging naar het bekladde monument en Sebastiaan ook.
'Anne-Marie went to the vandalized monument and Sebastiaan did too'
- (518) Hanna ging naar de nieuwe studio en Noortje ook.
'Hanna went to the new studio and Noortje did too'
- (519) Roos ging naar het gezellige bejaardentehuis en Jeroen ook.
'Roos went to the cozy retirement home and Jeroen did too'

B.2.5 Fillers of Experiment 1

- (520) Marja ging naar het station in Eindhoven en Saskia ging naar het station in Den Bosch.

‘Marja went to the station in Eindhoven and Saskia went to the station in Den Bosch’

- (521) Julia ging naar de bank in Londen en Adriaan ging naar de bank in New York.
‘Julia went to the bank in London and Adrian went to the bank in New York’
- (522) Frank ging naar de Nederlandse rechtbank en Anne ging naar de Britse rechtbank.
‘Frank went to the Dutch court and Anne went to the British court’
- (523) Linda ging naar het bos in Duitsland en Els ging naar het bos in Tsjechië.
‘Linda went to the forest in Germany and Els went to the forest in the Czech Republic’
- (524) Siri ging naar de snackbar in het centrum en Pim ging naar de snackbar langs de snelweg.
‘Siri went to the snack bar in the centre and Pim went to the snack bar along the highway’
- (525) Rob ging naar de Finse sauna en Kim ging naar de Turkse sauna.
‘Rob went to the Finnish sauna and Kim went to the Turkish sauna’
- (526) Esther ging naar de pas afgestudeerde tandarts en David ging naar de tandarts die bijna met pensioen ging.
‘Esther went to the newly graduated dentist and David went to the dentist who is nearly retired’
- (527) Daan ging naar de supermarkt in Overvecht en Eefje ging naar de supermarkt in Lombok.
‘Daan went to the supermarket in Overvecht and Eefje went to the supermarket in Lombok’
- (528) Sandra ging naar de sportschool in Lunetten en Edwin ging naar de sportschool in Zuilen.
‘Sandra went to the gym in Lunetten and Edwin went to the gym in Zuilen’
- (529) Rianne ging naar de gelukkig getrouwde fietsenmaker en Lotte ging naar de vrijgezelle fietsenmaker.

‘Rianne went to the happily married bicycle repair and Lotte went to the bachelor bicycle repair’

- (530) Hettie ging naar het openbare zwembad in Amsterdam en Gerard ging naar het privé-zwembad van George Clooney.
‘Hettie went to the public swimming pool in Amsterdam and Gerard went to the private pool of George Clooney’
- (531) Joep ging naar de universiteit in Eindhoven en Willemijn ging naar de universiteit in Maastricht.
‘Joe went to college in Eindhoven and Willemijn went to college in Maastricht’
- (532) Leo ging naar de apotheek in Kanaaleiland en Tom ging naar de apotheek in Lunetten.
‘Leo went to the drugstore in Kanaaleiland and Tom went to the drugstore in Lunetten’
- (533) Michiel ging naar de openbare bibliotheek en Evelien ging naar de privé-bibliotheek van de paus.
‘Michiel went to the public library and Evelien went to the private library of the Pope’
- (534) Jan ging naar het ziekenhuis in Leiden en Marie ging naar het ziekenhuis in Rotterdam.
‘Jan went to the hospital in Leiden and Marie went to the hospital in Rotterdam’
- (535) Dirk ging naar het vliegveld in New York en Magda ging naar het vliegveld in Los Angeles.
‘Dirk went to the airport in New York and Magda went to the airport in Los Angeles’
- (536) Lies ging naar de bioscoop in Hoog Catherijne en Sophie ging naar de bioscoop bij de Drift.
‘Lies went to the movies in Hoog Catherijne and Sophie went to the movie theatre at the Drift’
- (537) Bart ging naar het strand in Katwijk en Elise ging naar het strand van Scheveningen.
‘Bart went to the beach in Katwijk and Elise went to the beach in Scheveningen’
- (538) Stan ging naar het landgoed in Friesland en Joran ging naar het landgoed in Limburg.

- ‘Stan went to the estate in Friesland and Joran went to the estate in Limburg’
- (539) Femke ging naar het concert van Anouk en Inge ging naar het concert van Metallica.
‘Femke went to the concert of Anouk and Inge went to the concert of Metallica’
- (540) Loes ging naar het Chinese restaurant en Erik ging naar het Italiaanse restaurant.
‘Loes went to the Chinese restaurant and Erik went to the Italian restaurant’
- (541) Robert ging naar het hotel met maar drie verdiepingen en Liesbeth ging naar het hotel met twintig verdiepingen.
‘Robert went to the hotel with only three floors and Elizabeth went to the hotel with twenty floors’
- (542) Vincent ging naar het Ierse café en Henk ging naar het Franse café.
‘Vincent went to the Irish café and Hank went to the French café’
- (543) Hans ging naar het museum in Parijs en Bea ging naar het museum in Londen.
‘Hans went to the museum in Paris and Bea went to the museum in London’
- (544) Luuk ging naar het kasteel in Drenthe en Jaap ging naar het kasteel in Zuid-Holland.
‘Luuk went to the castle in Drenthe and Jaap went to the castle in Zuid-Holland’
- (545) Ruud ging naar de showroom in Tilburg en Imke ging naar de showroom in Maastricht.
‘Ruud went to the showroom in Tilburg and Imke went to the showroom in Maastricht’
- (546) Joost ging naar het voetbalveld van Quick Boys Katwijk en Maaïke ging naar het voetbalveld van Voetbalvereniging Harlingen.
‘Joost went to the soccer field of Quick Boys Katwijk and Maaïke went to the soccer field of Voetbalvereniging Harlingen’
- (547) Floor ging naar de bowlingbaan in Utrecht en Sam ging naar de bowlingbaan in Rotterdam.

‘Floor went to the bowling alley in Utrecht and Sam went to the bowling alley in Rotterdam’

- (548) Laura ging naar de Katholieke school en Ruben ging naar de Islamitische school.

‘Laura went to Catholic school and Ruben went to the Islamic school’

- (549) Harrie ging naar de boerderij op het Franse platteland en Ben ging naar de boerderij vlakbij Utrecht.

‘Harry went to the farm in the French countryside and Ben went to the farm near Utrecht’

- (550) John ging naar de fabriek in Groningen en Marleen ging naar de fabriek in Nijmegen.

‘John went to the factory in Groningen and Marleen went to the factory in Nijmegen’

- (551) Monique ging naar het meer in Italië en Roel ging naar het meer in Noorwegen.

‘Monique went to the lake in Italy and Roel went to the lake in Norway’

- (552) Renske ging naar het Belgische klooster en Olaf ging naar het Duitse klooster.

‘Renske went to the Belgian monastery and Olaf went to the German monastery’

- (553) Anne-Marie ging naar het monument voor oorlogsslachtoffers en Sebastiaan ging naar het monument voor de eerste vliegreis rond de aarde.

‘Anne-Marie went to the memorial (monument) of the war victims and Sebastian went to the memorial (monument) of the first flight around the world’

- (554) Hanna ging naar de studio in Hilversum en Noortje ging naar de studio in Amsterdam.

‘Hanna went to the studio in Hilversum and Noor went to the studio in Amsterdam.’

- (555) Roos ging naar het bejaardentehuis in Alkmaar en Jeroen ging naar het bejaardentehuis in Vlissingen.

‘Rose went to the retirement home in Alkmaar and Jeroen went to the retirement home in Flushing’

B.3 Materials of Experiment 2

This section is organized as follows. B.3.1 presents the materials with K-modified weak definites. B.3.2 presents the materials with K-modified regular definites. B.3.3 presents the fillers of Experiment 2.

B.3.1 Items with K-modified weak definites

- (556) Julia ging naar de commerciële bank en Adriaan ook.
‘Julia went to the commercial bank and Adriaan did too’
- (557) Frank ging naar de provinciale rechtbank en Anne ook.
‘Frank went to the provincial court and Anne did too’
- (558) Linda ging naar het tropische bos en Els ook.
‘Linda went to the tropical forest and Els did too’
- (559) Siri ging naar de Turkse snackbar en Pim ook.
‘Sir went to the Turkish snack bar and Pim did too’
- (560) Rob ging naar de Finse sauna en Kim ook.
‘Rob went to the Finnish sauna and Kim did too’
- (561) Esther ging naar de cosmetische tandarts en David ook.
‘Esther went to the cosmetic dentist and David did too’
- (562) Daan ging naar de Aziatische supermarkt en Eefje ook.
‘Daan went to the Asian supermarket and Eefje did too’
- (563) Leo ging naar de openbare apotheek en Tom ook.
‘Leo went to the public drugstore and Tom did too’
- (564) Jan ging naar het psychiatrische ziekenhuis en Marie ook.
‘Jan went to the psychiatric hospital and Marie did too’
- (565) Lies ging naar de alternatieve bioscoop en Sophie ook.
‘Lies went to the alternative movie theatre and Sophie did too’
- (566) Roos ging naar het protestantse bejaardentehuis en Jeroen ook.
‘Roos went to the protestant retirement home and Jeroen did too’
- (567) Hans ging naar het archeologische museum en Bea ook.
‘Hans went to the archaeological museum and Bea did too’

B.3.2 Items with K-modified regular definites

- (568) Stan ging naar het 18 de-eeuwse landgoed en Joran ook.
'Stan went to the 18th-century mansion and Joran did too'
- (569) Femke ging naar het klassieke concert en Inge ook.
'Femke went to the classical concert and Inge did too'
- (570) Robert ging naar het all-inclusive hotel en Liesbeth ook.
'Robert went to the all-inclusive hotel and Liesbeth did too'
- (571) Luuk ging naar het middeleeuwse kasteel en Jaap ook.
'Luuk went to the medieval castle and Jaap did too'
- (572) Ruud ging naar de Italiaanse showroom en Imke ook.
'Ruud went to the Italian showroom and Imke did too'
- (573) Joost ging naar het gemeentelijke voetbalveld en Maaïke ook.
'Joost went to the municipal soccer field and Maaïke did too'
- (574) Floor ging naar de Amerikaanse bowlingbaan en Sam ook.
'Floor went to the American bowling alley and Sam did too'
- (575) Laura ging naar de Katholieke school en Ruben ook.
'Laura went to the Catholic school and Ruben did too'
- (576) Harrie ging naar de biologische boerderij en Ben ook.
'Harrie went to the organic farm and Ben did too'
- (577) Monique ging naar het kunstmatige meer en Roel ook.
'Monique went to the the artificial lake and Roel did too'
- (578) Renske ging naar het Benedictijner klooster en Olaf ook.
'Renske went to the Benedictine monastery and Olaf did too'
- (579) Anne-Marie ging naar het 17de-eeuwse monument en Sebastiaan ook.
'Anne-Marie went to the 17th-century monument and Sebastiaan did too'

B.3.3 Fillers of Experiment 2

- (580) Marja ging naar het station in Eindhoven en Saskia ging naar het station in Den Bosch.
'Marja went to the station in Eindhoven and Saskia went to the station in Den Bosch'

- (581) Sandra ging naar de sportschool in Lunetten en Edwin ging naar de sportschool in Zuilen.
'Sandra went to the gym in Lunetten and Edwin went to the gym in Zuilen'
- (582) Rianne ging naar de gelukkig getrouwde fietsenmaker en Lotte ging naar de vrijgezelle fietsenmaker.
'Rianne went to the happily married bicycle repairman and Lotte went to the bachelor bicycle repairman'
- (583) Hettie ging naar het openbare zwembad in Amsterdam en Gerard ging naar het privé-zwembad van George Clooney.
'Hettie went to the public swimming pool in Amsterdam and Gerard went to the private swimming pool of George Clooney'
- (584) Joep ging naar de universiteit in Eindhoven en Willemijn ging naar de universiteit in Maastricht.
'Joe went to college in Eindhoven and Willemijn went to college in Maastricht'
- (585) Michiel ging naar de openbare bibliotheek en Evelien ging naar de privé-bibliotheek van de paus.
'Michiel went to the public library and Evelien went to the private library of the Pope'
- (586) Dirk ging naar het vliegveld in New York en Magda ging naar het vliegveld in Los Angeles.
'Dirk went to the airport in New York and Magda went to the airport in Los Angeles'
- (587) Bart ging naar het strand in Katwijk en Elise ging naar het strand van Scheveningen.
'Bart went to the beach in Katwijk and Elise went to the beach of Scheveningen'
- (588) Loes ging naar het Chinese restaurant en Erik ging naar het Italiaanse restaurant.
'Loes went to the Chinese restaurant and Erik went to the Italian restaurant'
- (589) Vincent ging naar het Ierse café en Henk ging naar het Franse café.
'Vincent went to the Irish café and Henk went to the French café'

- (590) John ging naar de fabriek in Groningen en Marleen ging naar de fabriek in Nijmegen.
'John went to the factory in Groningen and Marleen went to the factory in Nijmegen'
- (591) Hanna ging naar de studio in Hilversum en Noortje ging naar de fabriek in Amsterdam.
'Hanna went to the studio in Hilversum and Noortje went to the factory in Amsterdam'
- (592) Ria ging naar het grote park en Rik ook.
'Ria went to the big park and Rik did too'
- (593) Marieke ging naar de grijze flat en Martin ook.
'Marieke went to the grey apartment and Martin did too'
- (594) Anja ging naar het indrukwekkende paleis en Bert ook.
'Anja went to the impressive palace and Bert did too'
- (595) Ellen ging naar het populaire theater en Emiel ook.
'Ellen went to the popular theater and Emiel did too'
- (596) Petra ging naar de oude sluis en Frans ook.
'Petra went to the old gate and Frans did too'
- (597) Jenny ging naar de drukke haven en Egbert ook.
'Jenny went to the busy port and Egbert did too'
- (598) Ton ging naar de vriendelijke bakker en Lisa ook.
'Ton went to the friendly baker and Lisa did too'
- (599) Niels ging naar het nieuwe appartementencomplex en Klaartje ook.
'Niels went to the new apartment building and Klaartje did too'
- (600) Olivier ging naar de beroemde brug en Mirjam ook.
'Olivier went to the famous bridge and Mirjam did too'
- (601) Henk ging naar de hippe cocktailbar en Marlies ook.
'Henk went to the trendy cocktail bar and Marlies did too'
- (602) Jonathan ging naar het kleine tankstation en Nienke ook.
'Jonathan went to the little gas station and Nienke did too'
- (603) Tim ging naar de verbouwde drukkerij en Milou ook.
'Tim went to the renovated print shop and Milou did too'

APPENDIX C

Materials of Experiments 3 and 4

C.1 Introduction

The following items were used in Experiments 3 and 4, which are presented in Chapter 7. These studies tested the capacity of weak definites, bare singulars, indefinites and regular definites to elicit two types of anaphoric NPs, namely, pronouns and definites. Experiment 3 tested weak definites, bare singulars, and indefinites. Experiment 4 tested weak definites, regular definites, and indefinites. Each item consisted of sentences containing one of these four classes of target NPs plus a continuation with a blank. The blank is to be filled either with a pronoun or a definite containing the same noun that occurred in the target NP.

This appendix is organized as follows. Section C.2 presents the target items containing weak definites. Section C.3 presents the target items containing bare singulars. Section C.4 presents the target items containing indefinites. Section C.5 presents the target items containing regular definites. Section C.6 presents the fillers intercalated with the target items in both experiments. All these materials have been previously reported in Jolien Scholten’s internship report (Scholten, 2010).

C.2 Items with weak definites

The following items were used in Experiments 3 and 4. Some of them were only used in one of the two experiments. When this is the case, it will be specified.

C.2.1 Items with weak definites in direct object position

- (604) Sophie las vanochtend de krant. Toen ze alles had gelezen heeft ze _____ weggegooid.
'Sophie read the newspaper this morning. When she was finished reading, she threw _____ away'
- a. 'm
'him/it'
 - b. de krant
'the newspaper'

C.2.2 Items with weak definites in prepositional object position

- (605) Guido luisterde vanochtend naar de radio. Hij zette _____ zo hard dat de buren er wakker van werden.
'Guido listened to the radio this morning. He turned up _____ volume such that it woke up the neighbors'
- a. 'm
'him/it'
 - b. de radio
'the radio'
- (606) Toen Elias vertrok naar zijn werk, keek hij in de spiegel. Op dat moment heeft hij _____ vlug nog even schoon gemaakt.
'When Elias left for his work this morning, he looked in the mirror. He cleaned _____ quickly before he left'
- a. 'm
'him/it'
 - b. de spiegel
'the mirror'

- (607) Dinand ging onderweg naar de WC. Hij heeft _____ netjes achtergelaten.
'Dinand went to the bathroom when he was en route. He left _____ properly'
a. 'm
'him/it'
b. de WC
'the water-closet'
- (608) Joost ging gisteren met de bus naar zijn werk. Toen hij aan het eind van de middag uit z'n werk kwam, zag hij _____ met panne langs de weg staan.
'Joost went to his work by bus yesterday. When he left his work, he saw _____ broken down at the road'
a. 'm
'him/it'
b. de bus
'the bus'
- (609) Brenda ging vanavond naar de film. Na de voorstelling kraakte ze _____ af.
'Brenda went to the movies yesterday evening. After the show _____ was slated by her'
a. 'm
'him/it'
b. de film
'the movie'

C.3 Items with bare singulars

The following items were used in Experiment 3.

C.3.1 Items with bare singulars in direct object position

- (610) Aniek speelde vanmiddag viool. Pas daarna heeft ze _____ gestemd.
'Aniek played the violin this afternoon. Only afterwards she tuned _____.'

- a. 'm
'him/it'
- b. de viool
'the violin'

- (611) Elmar keek gisteravond TV. Rond middernacht heeft hij _____
pas uitgezet.
'Elmar watched TV yesterday evening. Just around midnight he
has turned _____ off'
- a. 'm
'him/it'
 - b. de TV
'the television'

C.3.2 Items with bare singulars in prepositional object position

- (612) Martin zette vanochtend het ontbijt op tafel. Na het ontbijt heeft
hij _____ afgeruimd.
'Martin put the breakfast on the table this morning. After break-
fast he has cleared _____ away'
- a. 'm
'him/it'
 - b. de tafel
'the table'
- (613) Gemma brand de vorige week haar muziek uit voering op DVD.
Daarna heeft ze _____ aan haar ouders gegeven.
'Gemma put her music show on DVD last week. After that she
gave _____ to her parents'
- a. 'm
'him/it'
 - b. de DVD
'the DVD'
- (614) Coby lag gisteravond vroeg in bed. Ze heeft zo liggen woelen dat
ze _____ vanmorgen opnieuw heeft opgemaakt.
'Coby went to bed early yesterday evening. She tossed and turned
so much that this morning she had cleaned _____ up again.'

- a. 'm
'him/it'
- b. het bed
'the bed'

(615) Jan ging gister en naar zolder. Het was er zo rommelig dat hij _____ van daag helemaal heeft opgeruimd.
'Jan went to the loft yesterday. It was such a mess that he arranged _____ entirely today'

- a. 'm
'him/it'
- b. de zolder
'the attic'

C.4 Items with indefinites

The following items were included in Experiments 3 and 4. Some of them were only used in one of the two experiments. When this is the case, it will be specified.

C.4.1 Items with indefinites in direct object position

(616) Peter kocht vorige week een kast bij de IKEA. Vandaag heeft hij _____ opgehaald.
'Peter bought a wardrobe at the IKEA last week. Today he has picked _____ up'

- a. 'm
'him/it'
- b. de kast
'the closet'

(This item was only used in Experiment 3)

(617) Marjon pakte zo juist een vaas voor de bloemen. Helaas heeft ze _____ laten vallen.
'Marjon just got a vase for the flowers. Unfortunately, she dropped _____.'

- a. 'm
'him/it'

- b. de vaas
'the vase'

(This item was only used in Experiment 3)

- (618) Suzanne kocht vorige maand een nietmachine. Ze heeft _____
net nog gebruikt.
'Suzanne bought a stapler last month. She just used _____.'

- a. 'm
'him/it'
- b. de nietmachine
'the stapler'

- (619) Bas kreeg voor zijn verjaardag een bal. De volgende dag heeft hij
_____ per ongeluk op het dak van de school getrapt.
'Bas got a ball for his birthday. Accidentally, he kicked _____
to the roof of the school the day after'

- a. 'm
'him/it'
- b. de bal
'the ball'

(This item was only used in Experiment 3)

- (620) Paulien schreef gisteravond een brief. Vandaag heeft ze _____
in de brievenbus gegooid.
'Paulien wrote a letter yesterday evening. Today she has put
_____ in the letter box'

- a. 'm
'him/it'
- b. de brief
'the letter'

- (621) Nienke zocht gisteren een map. Ze heeft _____ zo juist
gevonden.
'Nienke searched for a folder yesterday. She has just found _____.'

- a. 'm
'him/it'
- b. de map
'the folder'

(This item was only used in Experiment 3)

- (622) Marjon pakte zojuist een vaas. Helaas heeft ze _____ omgestoten.
 ‘Marjon just got a vase. Unfortunately, she dropped _____.’
- a. ’m
 ‘him/it’
 - b. de vaas
 ‘the vase’

(This item was only used in Experiment 4)

C.4.2 Items with indefinites in prepositional object position

- (623) Peter stond in een paskamer bij de Mexx. Toen hij alle kleren had gepast, heef thij _____ verlaten.
 ‘Peter was in a fitting-room of the Mexx-store. When he had tried all the clothes, he left _____.’
- a. ’m
 ‘him/it’
 - b. de paskamer
 ‘the fitting-room’

(This item was only used in Experiment 4)

- (624) Bas zat de afgelopen tien minuten op een bal. Zojuist heeft hij _____ weg getrapt.
 ‘Bas sat on a ball the last ten minutes. He has just kicked _____ away’
- a. ’m
 ‘him/it’
 - b. de bal
 ‘the ball’

(This item was only used in Experiment 4)

- (625) Nienke zocht gisteren naar een map. Ze heeft _____ zojuist gevonden.
 ‘Nienke was looking for a folder yesterday. She has just found _____.’

- a. 'm
'him/it'
- b. de map
'the folder'

(This item was only used in Experiment 4)

C.5 Items with regular definites

The following items were used in Experiment 4.

C.5.1 Items with regular definites in direct object position

- (626) Marie maakte de mat uit de hal schoon. Daarna heeft ze _____ terug gelegd.
'Marie cleaned the mat from the hall. After that she has put _____ it back'
- a. 'm
'him/it'
 - b. de mat
'the mat'
- (627) Jan repareerde gisteren zijn bureaulamp. Vandaag heeft hij _____ weer op z'n bureau gemonteerd.
'Jan fixed his desk lamp yesterday. Today he has attached _____ to his desk again'
- a. 'm
'him/it'
 - b. de bureaulamp
'the desk lamp'
- (628) Marie heeft vorige week haar kledingkast uit elkaar gehaald. De volgende dag heeft ze _____ geverfd.
'Marie has taken apart the wardrobe last week. The day after she has painted _____.'
- a. 'm
'him/it'

- b. de kledingkast
'the wardrobe'

C.5.2 Items with regular definites in prepositional object position

- (629) De astronauten reisden vorig jaar af naar de maan. Ze hebben _____ onderzocht.
'The astronauts travelled to the moon last year. They have studied _____.'
- a. haar
'her'
 - b. de maan
'the moon'
- (630) Jan tuurde via een speciale bril naar de zon. Hij heeft _____ langdurig bekeken.
'Jan gazed at the sun through special glasses. He has looked at _____ for a long time'
- a. haar
'her'
 - b. de zon
'the sun'
- (631) Jan zat zojuist op de fiets van zijn moeder. Even later heeft hij _____ weggezet.
'Jan just sat on his mother's bicycle. A few minutes later he has put _____ away'
- a. 'm
'him/it'
 - b. de fiets
'the bicycle'

C.6 Fillers

The following items were included in Experiments 3 and 4. Some of them were only used in one of the two experiments. When this is the case, it will be specified.

C.6.1 Items with the gap in subject position

- (632) Marie was de afgelopen weken veel aan het hardlopen. _____ heeft geprobeerd af te vallen.
'Marie was running a lot last weeks. _____ has tried to lose weight'
a. ze
 'she'
b. Marie
 'Marie'
- (633) Eva en Heleen verzorgden vanavond het eten. _____ hebben pannenkoeken gebakken.
'Eva and Heleen took care of the dinner this evening. _____ baked pancakes'
a. ze
 'they'
b. Eva en Heleen
 'Eva and Heleen'
- (634) Anne fietste van middag naar het park. _____ houdt van het park.
'Anne cycled to the park this afternoon. _____ loves the park'
a. ze
 'she'
b. Anne
 'Anne'
- (635) Wim liep afgelopen zondag door het bos. _____ lieten al aardig wat bladeren vallen.
'Wim walked through the forest last Sunday. _____ already lost many leaves'
a. ze
 'they'
b. de bossen
 'the woods'
- (636) Sjoerd en Ruben hebben Tom ontmoet. De volgende dag zagen _____ hem alweer.

‘Sjoerd and Ruben have met Tom. The next day _____ saw him again’

- a. ze
‘they’
- b. Sjoerd en Ruben
‘Sjoerd and Ruben’

(637) De demonstratie verliep erg onrustig. _____ waren erg boos.
‘The demonstration was very turbulent. _____ were very mad’

- a. ze
‘they’
- b. de demonstranten
‘the demonstrators’

(638) Het team speelde vandaag erg slecht. _____ waren erg moe.
‘The team played very badly today. _____ were very tired’

- a. ’m
‘him/it’
- b. de spelers
‘the players’

(639) Daan maakt graag grapjes. _____ komen meestal boven tafel als hij wat heeft gedronken.
‘Daan likes to make jokes. Mostly _____ appear when he has had a drink’

- a. ze
‘they’
- b. de grapjes
‘the jokes’

(640) Loes heeft op vakantie een leuk persoon ontmoet. _____ heeft echter nooit meer iets van zich laten horen.
‘Loes has met a nice person on vacation. _____ never let anything themselves heard.’

- a. hij
‘he’
- b. de persoon
‘the person’

- (641) De bloemen die op tafel stonden werden vandaag weggegooid.
 _____ hadden hun beste tijd gehad.
 ‘The flowers that were on the table were thrown away today.
 _____ had their best time’

- a. ze
‘they’
- b. de bloemen
‘the flowers’

(This item was only used in Experiment 3)

- (642) Gisteren gaven twee van mijn collega’s een waardeloos college.
 _____ liepen massaal weg.
 ‘Yesterday, two of my colleagues gave a horrible lecture. _____
 all walked away’

- a. ze
‘they’
- b. de studenten
‘the students’

(This item was only used in Experiment 4)

- (643) Mijn telefoon viel net in het water. Nu is _____ helemaal nat.
 ‘My cell phone just fell into the water. Now _____ is completely wet’

- a. ’ie
‘him/it’
- b. mijn telefoon
‘my telephone’

- (644) Harold kwam gisteren met het vliegtui gaan in Helsinki. Nu heeft _____ de stad al een beetje verkend.
 ‘Harold arrived in Helsinki yesterday by airplane. Now _____ already has discovered the city a bit’

- a. hij
‘he’
- b. Harold
‘Harold’

- (645) Marieke ging naar de kapper. _____ heeft een hele metamorfose gehad.
'Marieke went to the hairdresser. _____ has had a complete metamorphose'
a. ze
 'she'
b. het haar
 'the hair'
(This item was only used in Experiment 4)

C.6.2 Items with the gap in prepositional object position

- (646) Greta kon van nacht niet slapen. Gisteren ben ik met _____ naar een horrorfilm geweest.
'Greta couldn't sleep last night. Yesterday I went to see a horror movie with _____.'
a. haar
 'her'
b. Greta
 'Greta'
- (647) Inge wilde graag in het nieuwe bestuur. Ralph heeft tegen _____ gestemd.
'Inge wanted to become a member of the new board. Ralph has voted against _____.'
a. haar
 'her'
b. Inge
 'Inge'
- (648) Gisteren kwam ik een jongen tegen op het station. Samen met _____ ben ik naar huis gereisd.
'Yesterday I met a guy on the station. Together with _____ I travelled home'
a. hem
 'him'
b. de jongen
 'the boy'

- (649) Rosanne moest voor haar werk groep samen werken met twee jongens. Samen met _____ heeft ze een perfect werkstuk afgeleverd.
'Rosanne has to cooperate with two guys for her seminar. Together with _____ she delivered a perfect paper'
- a. hen
'them'
 - b. de jongens
'the boys'
- (650) Simone zocht gisteren haar konijn. Het beest zat al tien minuten achter _____
'Simone was looking for her rabbit yesterday. The animal had been sitting behind _____ for ten minutes'
- a. haar
'her'
 - b. Simone
'Simone'
- (651) Renske hielp Kris vorige week met verhuizen. Ze deed dat graag voor _____
'Renske helped Kris last week with his move. She liked to do that for _____.'
- a. hem
'him'
 - b. Kris
'Kris'
- (652) Vincent en Chantal hadden vorige week een flinke ruzie. Hilliene probeerde de woede tussen _____ te sussen.
'Vincent and Chantal had a big fight last week. Hilliene tried to calm the anger between _____.'
- a. hen
'them'
 - b. Vincent en Chantal
'Vincent and Chantal'
- (653) Marcel won gisteren een potje tennis van Melvin. Vandaag heeft hij weer tegen _____ gespeeld.

‘Marcel won Melvin in a tennis match yesterday. Today he has played against _____ again’

- a. hem
‘him’
- b. Melvin
‘Melvin’

(654) Nancy en Tom fietsten vanmorgen samen naar college. Tijdens college is Nancy ook nog eens naast _____ gaan zitten.
‘Nancy and Tom cycled together to college this morning. During the class Nancy also sat down next to _____.’

- a. hem
‘him’
- b. Tom
‘Tom’

(655) Maria stond bovenaan op de kandidatenlijst. Michel stond zes plekken onder _____
‘Maria was the first on the nomination. Michel was six positions below _____.’

- a. haar
‘her’
- b. Maria
‘Maria’

(656) Nick had een leidinggevende functie binnen zijn bedrijf. Wel werkten er nog vier directeuren boven _____
‘Nick had a leading position in his company. However, there were four managers who worked above _____.’

- a. hem
‘him’
- b. Nick
‘Nick’

(657) Jolanda was vorige week een paar dagen ziek. Raimond is toen bij _____ gebleven.
‘Jolanda was ill last week. Raimond has stayed with _____ then’

- a. haar
‘her’

- b. Jolanda
'Jolanda'

C.6.3 Items with the gap in object position

- (658) De bamiballetjes blijven altijd tot het laatst liggen. _____ vindt iedereen het minst lekker.
'The "noodle balls" always remain (intact) at the end. Everybody thinks that _____ are the least tasty'
- a. hen
'they'
 - b. de bamiballetjes
'the noodle balls'
- (This item was only used in Experiment 3)
- (659) Susan heeft mooie foto's gemaakt in het bos. _____ heeft ze me vanmorgen laten zien.
'Susan took nice pictures in the forest. She showed _____ to me this morning'
- a. hen
'them'
 - b. de foto's
'the pictures'
- (660) Henk is bloemenverkoper op de markt. Gisteren heeft hij _____ in grote hoeveelheden verkocht.
'Henk sells flowers at the market. Yesterday he sold _____ in huge quantities'
- a. ze
'them'
 - b. de bloemen
'the flowers'
- (661) Marjan is babysitter. Gisteren heeft ze _____ een verkeerde luier omgedaan.
'Marjan is babysitter. Yesterday she has put _____ a wrong diaper on'
- a. hem
'him'

- b. de baby
'the baby'
- (662) Willem is hondenfokker. Vorig jaar heeft hij _____ in groten getale gefokt.
'Willem breeds dogs. Last year he has bred _____ in huge quantities'
- a. ze
'them'
- b. honden
'dogs'
- (663) Mark is postzegelverzamelaar. De afgelopen jaren heeft hij _____ in mappen gestopt.
'Mark is a stamp collector. The last couple of years he has put _____ in folders'
- a. ze
'them'
- b. zijn postzegels
'his stamps'
- (664) Bert is schoenenpoetser. Vandaag heeft hij veel _____ gepoetst.
'Bert is shoe polisher. Today he has polished many _____.'
- a. van ze
'of them'
- b. schoenen
'shoes'
- (665) Gisteravond heeft Judith koekjes gebakken. _____ heeft ze helaas moeten weggooien.
'Judith made cookies last night. Unfortunately, she had to throw _____ away'
- a. hen
'them'
- b. de koekjes
'the biscuits'
- (This item was only used in Experiment 3)
- (666) Gisteravond bakte Judith koekjes. Helaas heeft ze _____ laten aanbakken.

‘Judith made cookies last night. Unfortunately, she has burned _____.’

- a. ze
‘them’
- b. de koekjes
‘the biscuits’

(This item was only used in Experiment 4)

- (667) Kasper had nog wat dollars in zijn portemonnee. _____ wilde hij kwijt raken voordat hij Amerika ging verlaten.
‘Kasper still had some dollars in his wallet. He wanted to get rid of _____ before he left America’

- a. hen
‘them’
- b. de dollars
‘the dollars’

- (668) Leonie is columnist voor een tijdschrift. Ze heeft _____ vooral’s avonds geschreven.
‘Leonie is a columnist for a magazine. She has written _____ mostly in evenings’

- a. hen
‘them’
- b. haar columns
‘her columns’

- (669) Lotte gaf leuke oorbellen cadeau aan haar zusje. Ze heeft _____ gekocht bij een juwelier.
‘Lotte gave nice earrings to her sister as a present. She has bought _____ at a jeweller’

- a. ze
‘them’
- b. de oorbellen
‘the earrings’

- (670) De docente had laatst in de klas een discussie met Bram en Lars. _____ heeft ze later een artikel laten lezen.
‘Recently, the teacher had a discussion with Bram and Lars during class. She has let _____ read an article’

- a. hun
 'them'
- b. Bram en Lars
 'Bram and Lars'

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Samenvatting in het Nederlands

Voor het merendeel van de definitieve naamwoordgroepen (*definieten*) geldt de vereiste dat ze moeten verwijzen naar entiteiten die uniek geïdentificeerd kunnen worden in de context waarin ze worden gebruikt. Dit wordt geïllustreerd in de afbeelding en het voorbeeld in (C.1). Door deze uniekheidsvoorwaarde zijn definieten normaliter onacceptabel in een context waarin er meer dan één entiteit is die aan hun descriptieve inhoud voldoet, zoals geïllustreerd in de afbeelding en de zin in (C.2). Echter, zoals de illustratie en het voorbeeld in (C.3) laten zien, is het gebruik van sommige definieten volkomen acceptabel in zulke niet-unieke contexten. Vanwege deze merkwaardige eigenschap worden deze definieten ook wel *zwakke definieten* genoemd.



*Adrian ging naar **het** restaurant*

FIGURE C.1



*#Adrian ging naar **het restaurant**.*

FIGURE C.2



*Lola ging naar **de supermarkt***

FIGURE C.3

Dit proefschrift gaat over de betekenis van zwakke definieten. Er zijn belangrijke redenen waarom deze definieten goed behoren te worden begrepen en geanalyseerd. Eén reden is dat zwakke definieten een aantal afwijkende lexicale, semantische en syntactische eigenschappen hebben die, samen met hun niet-unieke verwijzing, een uitdaging vormen voor één van de centrale onderwerpen voor de studie van de betekenis van natuurlijke taal: definieten. Een andere reden is dat zwakke definieten een cross-linguïstisch fenomeen vormen dat nauw samenhangt met andere

taalkundige fenomenen die ook meer studie vergen. De eigenschappen van zowel zwakke definieten als andere gerelateerde fenomenen worden uitgebreid besproken in deze dissertatie.

Dit proefschrift is gericht op drie onderzoeksvragen. De eerste is hoe zwakke definieten en de zinnen waarin ze voorkomen precies worden geïnterpreteerd. De tweede vraag is welke semantische theorie de interpretatie van zwakke definieten en de zinnen waarin ze voorkomen kan verklaren. De derde vraag is hoe de eigenschappen van zwakke definieten volgen uit deze semantiek.

Om deze onderzoeksvragen te beantwoorden heeft dit proefschrift drie doelen: tot een beter begrip komen van de eigenschappen van zwakke definieten, een compositionele analyse van hun betekenis te ontwikkelen, en de voorspellingen van deze theorie te staven. Voor de eerste en de derde taak worden verschillende taalkundige tests toegepast. In de gevallen waarin deze tests niet tot duidelijke grammaticaliteitsoordelen leiden, waar deze wel van belang zijn voor de ontwikkeling van de analyse, wordt daarnaast ook experimenteel bewijs geleverd.

Om een theorie over de betekenis van zwakke definieten te ontwikkelen wordt van een formeel semantisch kader uitgegaan. In deze traditie wordt over het algemeen aangenomen dat wat definieten bijdragen qua betekenis onder andere de vereiste is dat hun referent uniek is. Een mogelijke strategie om deze vereiste van uniekheid te behouden maar tegelijkertijd de eigenschappen van zwakke definieten – waaronder het schijnbare gebrek aan verwijzing naar unieke individuen – te kunnen verklaren, is om zwakke definieten te analyseren als naamwoordgroepen die verwijzen naar soorten van individuen. De definiet *de supermarkt* bijvoorbeeld, in Afbeelding 1.3, zou dan verwijzen naar de soort SUPERMARKT in plaats van naar een lid van die soort, een specifieke supermarkt. Het uitwerken van deze strategie was de motivatie van het onderzoek dat in dit proefschrift gepresenteerd wordt.

Hieronder volgt een kort overzicht van de resultaten van ieder hoofdstuk. **Hoofdstuk 2**, dat volgt op een algemene introductie, biedt een gedetailleerd overzicht van de eigenschappen van zwakke definieten, voortbouwend op Carlson and Sussman (2005). De belangrijkste kenmerken die besproken worden zijn de volgende:

- (1) *Niet-unieke verwijzing*
Context. Lola reisde per trein van Amsterdam naar Nijmegen, maar ze moest halverwege overstappen.
Zin. Lola nam de trein van Amsterdam naar Nijmegen.
- (2) *Overeenkomst met generieke definiëten*
 - a. Ik heb vanochtend de krant gelezen.
 - b. De krant is een goede bron van informatie en amusement.
- (3) *Restricties op modificatie*
 - a. Lola ging naar #het oude ziekenhuis.
 - b. Lola ging naar het psychiatrische ziekenhuis.
- (4) *Problematische verwijzing binnen discourse*
 Lola luisterde naar de radio_i tot ze in slaap viel. ? Ze zette hem_i uit toen ze midden in de nacht wakker werd.
- (5) “Sloppy identity” in zinnen met VP-ellipsis
 Lola las de krant en Alice ook.
 (Het is mogelijk dat Lola en Alice allebei een andere krant hebben gelezen)
- (6) *Interpretaties met klein bereik*
 Iedere bibliothecaris las de krant.
 (Het is mogelijk dat elke bibliothecaris een andere krant heeft gelezen)
- (7) *Voorkeur voor objectpositie en beperkte mogelijkheid om als subject van episodische zinnen te fungeren*
 - a. Ik heb vandaag de krant gelezen.
 - b. #De krant is nat geworden vandaag.
- (8) *Betekenisverrijking*
 Eva heeft de dokter gebeld = Eva heeft een dokter gebeld + om om medische hulp te vragen.
- (9) *Beperkte set van nomina*
 - a. Martha luisterde naar de radio.

b. Martha luisterde naar #de walkie-talkie.

(10) *Beperkte set van regerende werkwoorden
(en werkwoord-voorzetselcombinaties)*

a. Martha luisterde naar de radio.

b. Martha repareerde #de radio.

Om deze eigenschappen te verklaren wordt in **Hoofdstuk 3** een compositionele analyse van zwakke definieten gegeven. Het voorstel is dat zwakke definieten verwijzen naar atomaire soorten, zoals in het volgende voorbeeld:

$$(11) \quad [[de\ krant]] = \iota x_k [Krant(x_k)] \\ = \mathbf{K}$$

Deze soorten combineren met predicaten die werken op het niveau van objecten door middel van de Kind Lifting Rule (C.6.3). De functie van deze lexicale regel is om predicaten van het objectniveau naar het soortniveau te tillen, om aan te geven dat de soorten die combineren met de opgetilde predicaten geïntantieerd worden door de realisatierelatie R , en om de relatie U – die overeenkomt met het stereotypische gebruik (SG) van soorten – te incorporeren in de denotatie van de opgetilde predicaten.

(12) *Kind Lifting Rule*

Als V een transitief werkwoord is (of een werkwoord-voorzetselcombinatie) met een intern argument Arg en V heeft de betekenis $\lambda x_i \lambda e [V(e) \wedge Arg(e) = x_i]$, dan heeft V ook de betekenis $\lambda x_k \lambda e [V(e) \wedge R(Arg(e), x_k) \wedge U(e, x_k)]$.

Dus als V bijvoorbeeld *lezen* is en de betekenis in (C.6.3) heeft, dan heeft het ook de betekenis in (C.6.3):

$$(13) \quad (5) \quad [[lezen]] = \lambda x_i \lambda e [Lezen(e) \wedge Arg(e) = x_i] \\ (5) \quad [[lezen]] = \lambda x_k \lambda e [Lezen(e) \wedge R(Th(e), x_k) \wedge U(e, x_k)]$$

De KLR is een mechanisme om predicaten te genereren dat in principe op elk werkwoord toegepast kan worden, met als uitkomst een functie die met een atomaire soort kan combineren. De regel is alleen werkzaam als er zich twee omstandigheden samen voordoen, namelijk dat het predicaat in kwestie combineert met een soort die met een SG geassocieerd wordt,

en dat de set van gebeurtenissen die corresponderen met die SG overlapt met de set van gebeurtenissen die corresponderen met het predicaat. Deze tweeledige vereiste is vastgelegd in de volgende voorwaarde:

- (14) *Voorwaarde op het toepassen van de KLR*
 Een werkwoord (of een werkwoord-voorzetselcombinatie) V met de betekenis $\lambda x_i \lambda e [V(e) \wedge Arg(e) = x_i]$ kan ook de betekenis $\lambda x_k \lambda e [V(e) \wedge R(Arg(e), x_k) \wedge U(e, x_k)]$ krijgen en dan combineren met een DP die verwijst naar een atomaire soort \mathbf{S} desda $\lambda e V(e) \cap \lambda e U(e, \mathbf{S}) \neq \emptyset$.

In dit voorstel heeft een zin met een zwakke definiet zoals (670a) de logische vorm in (670b), die stelt dat de zin waar is dan en slechts dan als er een lees-gebeurtenis was, met als agens Lola, waarbij het thema van de gebeurtenis een instantiatie is van de soort KRANT, en als de gebeurtenis deel uitmaakt van het SG van de soort KRANT:

- (15) a. Lola las de krant.
 b. $\exists e [Las(e) \wedge Ag(e) = lola \wedge R(Th(e), \mathbf{K}) \wedge U(e, \mathbf{K})]$

Deze analyse verklaart de eigenschappen van zwakke definieten, opgesomd in (C.6.3)-(C.6.3), als volgt. Ten eerste geeft de aanname dat een zwakke definiet een gewone definiet is, maar een die verwijst naar soorten, een verklaring voor zowel de aanwezigheid van het definiete lidwoord als voor het wegvallen van de uniekheidspresuppositie op het niveau van reguliere individuen. Aangezien er uniekheid is op het niveau van soorten en aangezien instantiaties van soorten entiteiten of sommen kunnen zijn, zijn zinnen die een zwakke definiet bevatten acceptabel in een context waarin er meer dan één entiteit is die aan hun descriptieve content voldoet (C.6.3). De aanname dat zwakke definieten naar soorten verwijzen verklaart ook de overeenkomst tussen zwakke definieten en generieke definieten (C.6.3). Bovendien verklaart dit waarom modificatie de zwakke lezing van een zwakke definiet blokkeert (670a), tenzij het resultaat een subklasse van het gemodificeerde naamwoord is (670b). De logische vorm die wordt aangenomen voor zinnen met zwakke definieten, waarin geen sprake is van existentiële kwantificatie over individuen, strookt met de moeite die ze hebben om te verwijzen binnen de discourse (C.6.3). *Sloppy readings* van zwakke definieten in zinnen met VP-ellipsis volgen ook uit de logische vorm. Zoals te zien is in (670b) is er een thematische rol voor elke gebeurtenis:

- (16) a. Lola las de krant en Alice ook.
 b. $\exists e[Las(e) \wedge R(Th(e), \mathbf{K}) \wedge Ag(e) = lola] \wedge$
 $\exists e'[Las(e) \wedge R(Th(e'), \mathbf{K}) \wedge Ag(e') = alice]$

Lezingen met klein bereik (C.6.3) volgen hier ook uit. De kwantor die de gebeurtenis bindt, heeft klein bereik ten opzichte van de universele kwantor, en de thematische rol is afhankelijk van de gebeurtenisvariabele:

- (17) a. Iedere bibliothecaris las de krant.
 b. $\forall y[Bibliothecaris(y) \rightarrow \exists e[Las(e) \wedge R(Th(e), \mathbf{K}) \wedge Ag(e) = y]]$

Het feit dat de zwakke lezing van definieten voortvloeit uit het toepassen van de KLR verklaart waarom zwakke definieten voornamelijk voorkomen in objectpositie en niet in subjectpositie (C.6.3). Deze regel is alleen van toepassing op interne argumenten, die normaliter corresponderen met objecten en niet met subjecten. De aanwezigheid van het *U*-predicaat, dat geïncorporeerd wordt in de naar het niveau van soorten getilde predicaten die ook het resultaat zijn van de KLR, relateert een SG aan een soort. Hieruit volgt de verrijkte betekenis van zinnen met zwakke definieten (C.6.3). Tot slot worden de lexicaal restricties die gelden voor zwakke definieten verklaard door het feit dat er bepaalde voorwaarden zijn verbonden aan het toepassen van de KLR: alleen nomina die een SG hebben kunnen een zwakke lezing krijgen (C.6.3). Hetzelfde geldt voor predicaten: alleen in het geval dat een predicaat een set van gebeurtenissen vormt die overlapt met een set van gebeurtenissen die corresponderen met een SG is een zwakke lezing mogelijk (C.6.3).

Uit verschillende onderdelen van deze analyse volgt een aantal voorspellingen. Het doel in de vier hoofdstukken na Hoofdstuk 3 is om deze voorspellingen te staven. Het eerste onderdeel is de aanname dat zwakke definieten naar soorten verwijzen. Hieruit volgt de voorspelling dat alleen adjectieven die op het niveau van soorten werken met zwakke definieten kunnen combineren. In Hoofdstuk 4 wordt hiervoor bewijs gegeven. Het tweede onderdeel is de associatie van soorten met SGs, die door middel van de KLR gevat is in de aanwezigheid van het *U*-predicaat in de denotatie van werkwoorden. Hieruit volgen twee voorspellingen. De eerste is dat een nomen alleen in een zwakke definitie kan voorkomen als het een object aanduidt dat op een stereotypische manier wordt gebruikt. De tweede is dat alleen werkwoorden die deze stereotypes ondersteunen

zwakke definieten kunnen regeren. Voor beide voorspellingen wordt bewijs geleverd in Hoofdstuk 5. Het derde onderdeel is de aanwezigheid van U in de logische vorm van zinnen met zwakke definieten. Hieruit volgt de voorspelling dat de betekenisverrijking in deze zinnen (tenminste gedeeltelijk) waarheidsconditioneel is. Dit wordt bevestigd in Hoofdstuk 6. Het vierde onderdeel is de afwezigheid in de logische vorm van expliciete existentiële kwantificatie over individuen die soorten instantiëren. Hieruit volgt de voorspelling dat zwakke definieten geen discourse-referenten kunnen opzetten. In Hoofdstuk 7 worden data gepresenteerd die deze aanname ondersteunen. In wat volgt worden de belangrijkste conclusies van deze hoofdstukken besproken.

Hoofdstuk 4 gaat in op de aard van de adjectieven die acceptabel zijn in constructies met zwakke definieten. In het eerste deel van het hoofdstuk wordt getoond dat mijn analyse van zwakke definieten voorspelt dat alleen adjectieven die op het niveau van soorten opereren kunnen combineren met zwakke definieten. In het tweede deel wordt een beschrijving gegeven van de zogenaamde *relationele adjectieven* en wordt de semantiek van McNally and Boleda (2004) aangenomen. De empirische motivatie hiervoor is dat het merendeel van de adjectieven die met zwakke definieten kunnen combineren relationeel zijn. De theoretische motivatie is dat een onderdeel van de semantiek die McNally en Boleda voor deze klasse van adjectieven voorstellen predicatie over soorten is, wat strookt met bovengenoemde voorspelling. In het derde deel van het hoofdstuk worden twee experimenten beschreven die tot doel hadden om bewijs te leveren voor deze voorspelling. In deze experimenten werden relationele adjectieven en adjectieven die werken op het niveau van individuen vergeleken met betrekking tot het effect dat ze hadden op de beschikbaarheid van de *sloppy reading* van zwakke en normale definieten in zinnen met VP-ellipses. De belangrijkste bevinding was dat relationele adjectieven inderdaad acceptabeler waren dan adjectieven die werken op het niveau van individuen in combinatie met zwakke definieten.

In **Hoofdstuk 5** wordt ingegaan op de lexicale betekenis van nomina en werkwoorden in constructies met zwakke definieten (respectievelijk *zwakke nomina* en *zwakke werkwoorden*), en wordt er voor iedere categorie een gemeenschappelijke eigenschap van haar leden geïdentificeerd. De belangrijkste generalisatie met betrekking tot zwakke definieten is dat ze functionele objecten aanduiden die op een stereotypische manier gebruikt worden. De belangrijkste generalisatie met betrekking tot zwakke werkwoorden is dat ze activiteiten aanduiden die in overeenstemming zijn

met deze stereotypische manieren van gebruik. Deze twee generalisaties beslaan niet alleen (bijna) alle zwakke nomina en zwakke werkwoorden, maar vormen ook de motivatie om aan te nemen dat het *U*-predicaat – door middel van de KLR – deel uitmaakt van de denotatie van werkwoorden die zwakke definieten regeren (en dus van de logische vorm van de zinnen). Deze regel is alleen van toepassing en genereert alleen zwakke definieten als de soort waarnaar de definiet verwijst geassocieerd wordt met een SG, en als er overlap is tussen de set van gebeurtenissen die overeenkomt met het werkwoord en de set van gebeurtenissen die overeenkomt met de SG. De belangrijkste generalisatie met betrekking tot zwakke definieten komt tot uiting in de eerste voorwaarde, terwijl die met betrekking tot zwakke werkwoorden tot uiting komt in de tweede voorwaarde.

Op basis van deze discussie spitst het tweede deel van Hoofdstuk 5 zich toe op de vraag of zwakke nomina en werkwoorden wel of niet lexicaal welgevormde woordklassen vormen. De conclusie wat betreft zwakke werkwoorden is dat ze geen lexicale klasse vormen, aangezien ze het resultaat zijn van de toepassing van een lexicale regel (de KLR). De conclusie met betrekking tot zwakke nomina is dat zij wel een lexicaal onderscheiden klasse vormen. Wat hen kenmerkt is een specificatie in de lexicale lemma's dat het object dat ze aanduiden een stereotiep gebruik kent.

In het laatste deel van het hoofdstuk wordt geprobeerd de betekenis van zwakke nomina formeel weer te geven door gebruik te maken van Pustejovsky's (1991) Generative Lexicon Theory (GLT), een theorie waarin de betekenis van woorden wordt weergegeven door middel van structuren opgebouwd uit vier delen, waaronder het Qualia-deel, dat op zijn beurt ook weer uit vier onderdelen bestaat. Eén van deze onderdelen, de Telische rol, duidt het doel van functionele objecten aan. In principe kan de betekenis van zwakke nomina op dezelfde manier worden gerepresenteerd als de GLT functionele nomina representeert, namelijk door toevoeging van een telische rol. Mijn voorstel is om zwakke nomina van andere functionele nomina te onderscheiden door middel van een extra specificatie die aangeeft dat de telische rol stereotiep is.

In **Hoofdstuk 6** wordt de pragmatisch-semantische aard bestudeerd van de twee typen informatie die zinnen met zwakke definieten uitdrukken, namelijk de letterlijke betekenis (LB) en de verrijkte betekenis (VB). Hiertoe wordt van een aantal eigenschappen bekeken of LBs en VBs ze vertonen, namelijk *detachability*, *reinforceability*, *defeasibility*, *at-*

issueness, en *projectivity*. Verder worden de eigenschappen van beide informatietypen vergeleken met die van implicaties, presupposities, conventionele en conversationele implicaturen, en idiomatische betekenissen. De belangrijkste conclusie wat betreft LBs is dat het *non-detachable*, *non-reinforceable*, *non-defeasible*, *at-issue* en *non-projective* betekenissen zijn. Daarom kunnen LBs beschouwd worden als standaard waarheidsconditionele inhoud. De belangrijkste conclusie met betrekking tot VBs is echter dat het *detachable*, *reinforceable*, *non-defeasible*, *at-issue*, en *non-projective* betekenissen zijn. VBs kunnen daarom niet simpelweg gereduceerd worden tot één enkel betekenisstype. Om deze mengelmoe van eigenschappen te verklaren is het voorstel daarom dat VBs een mix zijn van waarheidscondities en implicaturen. Bovendien is dit voorstel verenigbaar met mijn analyse van zwakke definieten.

In **Hoofdstuk 7** wordt ingegaan op de discourse-referentiële aard van zwakke definieten, waarbij mijn theorie voorspelt dat verwijzing van zwakke definieten binnen de discourse problematisch is. Allereerst worden de kenmerken besproken die traditioneel worden toegeschreven aan normale definieten en indefinieten, te weten dat indefinieten nieuwe referenten introduceren en definieten al bekende referenten oppikken. Daarna wordt getoond dat het op het eerste gezicht onduidelijk is of zwakke definieten een referent kunnen introduceren. Bewijs hiervoor is het twijfelachtige vermogen van deze naamwoordgroepen om te co-refereren met pronomina: aan de ene kant klinken ze niet zo acceptabel als gewone definieten en indefinieten; aan de andere kant zijn ze acceptabeler dan kale enkelvoudige nomina, een andere soort referentieel gebrekkige NPs. Om deze tegenstrijdige data te verklaren worden er in dit hoofdstuk twee experimenten beschreven waarin wordt onderzocht in hoeverre er naar zwakke definieten, kale enkelvoudige nomina, indefinieten en normale definieten kan worden terugverwezen door middel van pronomina en definieten. Uit deze experimenten blijkt dat dit significant minder gebeurt bij zwakke definieten en kale enkelvoudige nomina dan bij indefinieten (er was geen significant verschil tussen zwakke definieten/kale enkelvoudige nomina en normale definieten). De statistische analyse van deze data toont echter aan dat dit verschil niet voortkomt uit de discourse-referentiële aard van zwakke definieten en kale enkelvoudige nomina. In plaats daarvan lijkt het te moeten worden toegeschreven aan het feit dat zowel de zwakke definieten als de kale enkelvoudige nomina in deze experimenten voornamelijk voorkwamen als prepositioneel object. Dit betekent dat verder onderzoek nodig is om te bepalen wat de preciese discourse-referentiële

aard van zwakke definiëten is. Eén poging hiertoe is een experiment van Cooley (2013), wat besproken wordt in dit hoofdstuk. Als afsluiting van het hoofdstuk wordt een aantal suggesties gedaan voor toekomstig onderzoek, waaronder vragenlijsten om acceptabiliteitsoordelen te ontlokken en *self-paced reading*-, eye-tracking- en ERP-experimenten.

Tot slot wordt in **Hoofdstuk 8** een samenvatting gegeven van de belangrijkste uitkomsten van dit proefschrift, worden er enkele suggesties voor toekomstig onderzoek gegeven, en worden andere analyses van zwakke definiëten besproken.

Curriculum Vitae

Ana Aguilar Guevara was born on August 12, 1980. In 1998 she began her studies in Spanish Language and Literature at the Universidad Nacional Autónoma de México. After graduating from her BA, she joined the Research Master in Spanish Linguistics, also at UNAM, where she specialized in historical linguistics. After the completion of this master, in 2006, she joined the Utrecht University Research Master in Theoretical Linguistics, where she obtained her degree specialized in formal semantics and psycholinguistics. In 2008, Ana started working as a PhD student at Utrecht University. This dissertation is the result of her PhD research.